

SECTION MA

MAINTENANCE

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PRECAUTIONS

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PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

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The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

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PREPARATION

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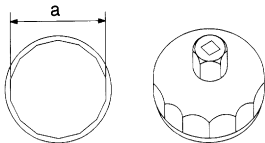
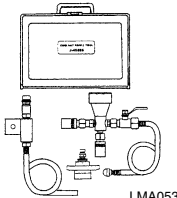
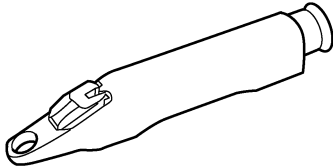
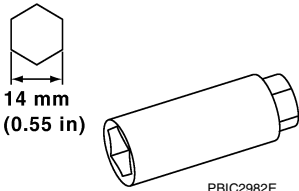
PREPARATION

PREPARATION

Special Service Tool

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The actual shapes of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
KV10115801 (J-38956) Oil filter wrench  S-NT375	Removing and installing oil filter a: 64.3 mm (2.531 in)
KV991J0070 (J-45695) Coolant Refill Tool  LMA053	Refilling engine cooling system
— (J-23688) Engine coolant refractometer  WBIA0539E	Checking concentration of ethylene glycol in engine coolant
— (J-48891) Spark plug wrench  PBIC2982E	Removing and installing spark plug

Commercial Service Tool

INFOID:000000009464529

Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts

GENERAL MAINTENANCE

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GENERAL MAINTENANCE FOR USA AND CANADA

FOR USA AND CANADA : Explanation of General Maintenance

INFOID:000000009464530

General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their **NISSAN** dealers do them.

OUTSIDE THE VEHICLE

The maintenance items listed here should be performed from time to time, unless otherwise specified.

Item		Reference page
Tires	Check the pressure with a gauge often and always prior to long distance trips. Adjust the pressure in all tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	MA-39
Wheel nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	MA-39
Tire rotation	Tires should be rotated every 5,000 miles (8,000 km).	MA-39
Tire Pressure Monitoring System (TPMS) transmitter components	Replace the TPMS transmitter grommet seal, valve core and cap when the tires are replaced due to wear or age.	WT-57
Wheel alignment and balance	If the vehicle should pull to either side while driving on a straight and level road, or if you detect uneven or abnormal tire wear, there may be a need for wheel alignment. If the steering wheel or seat vibrates at normal highway speeds, wheel balancing may be needed. For additional information regarding tires, refer to "Important Tire Safety Information" (US) or "Tire Safety Information" (Canada) in the NISSAN Warranty Information Booklet.	FSU-25
Windshield	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
Windshield wiper blades	Check for cracks or wear if they do not wipe properly.	—
Doors and engine hood	Check that all doors and the engine hood operate properly. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check for lubrication frequently.	MA-45. "LOCKS, HINGES AND HOOD LATCH : Lubricating"
Lamps	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim. Clean the headlamps on a regular basis.	EXL-122

INSIDE THE VEHICLE

The maintenance items listed here should be checked on a regular basis, such as when performing periodic maintenance, cleaning the vehicle, etc.

Item		Reference page
Warning lamps and chimes	Make sure that all warning lamps and chimes are operating properly.	—
Windshield wiper and washer	Check that the wipers and washer operate properly and that the wipers do not streak.	—
Windshield defroster	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioner.	—
Steering wheel	Check that it has the specified play. Check for changes in the steering condition, such as excessive play, hard steering or strange noises. Free play: Less than 35 mm (1.38 in)	—

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Item		Reference page
Seats	Check seat position controls such as seat adjusters, seatback recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restraints move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seatbacks.	—
Seat belts	Check that all parts of the seat belt system (e.g. buckles, anchors, adjusters and retractors) operate properly and smoothly, and are installed securely. Check the belt webbing for cuts, fraying, wear or damage.	SB-5, "Inspection"
Accelerator pedal	Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—
Brakes	Check that the brake does not pull the vehicle to one side when applied.	—
Brake pedal and booster	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully. Check the brake booster function. Be sure to keep the floor mats away from the pedal.	BR-48 , BR-49
Parking brake	Check that the pedal has the proper travel and make sure that the vehicle is held securely on a fairly steep hill when only the parking brake is applied.	PB-4
CVT P (Park) position mechanism	On a fairly steep hill check that the vehicle is held securely with the shift selector in the P (Park) position without applying any brakes.	—

UNDER THE HOOD AND VEHICLE

The maintenance items listed here should be checked periodically (e.g. each time you check the engine oil or refuel).

Item		Reference page
Windshield washer fluid	Check that there is adequate fluid in the tank.	—
Engine coolant level	Check the coolant level when the engine is cold.	MA-14 (QR25DE) MA-23 (VQ35DE)
Radiator and hoses	Check the front of the radiator and clean off any dirt, insects, leaves, etc., that may have accumulated. Make sure the hoses have no cracks, deformation, deterioration or loose connections.	—
Brake and clutch fluid levels	Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoir.	MA-41
Battery	Check the fluid level in each cell. It should be between the "MAX" and "MIN" lines. Vehicles operated in high temperatures or under severe conditions require frequent checks of the battery fluid level.	—
Engine drive belts	Make sure that no belt is frayed, worn, cracked or oily.	MA-13 (QR25DE) MA-22 (VQ35DE)
Engine oil level	Check the level on the oil level gauge after parking the vehicle on a level spot and turning off the engine.	MA-17 (QR25DE) MA-26 (VQ35DE)
Power steering fluid level and lines	Check the level when the fluid is cold, with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	MA-44
Exhaust system	Make sure there are no loose supports, cracks or holes. If the sound of the exhaust seems unusual or there is a smell of exhaust fumes, immediately locate the trouble and correct it.	MA-31
Underbody	The underbody is frequently exposed to corrosive substances such as those used on icy roads or to control dust. It is very important to remove these substances, otherwise rust will form on the floor pan, frame, fuel lines and around the exhaust system. At the end of winter, the underbody should be thoroughly flushed with plain water, being careful to clean those areas where mud and dirt can easily accumulate.	—
Fluid leaks	Check under the vehicle for fuel, oil, water or other fluid leaks after the vehicle has been parked for a while. Water dripping from the air conditioner after use is normal. If you should notice any leaks or gasoline fumes are evident, check for the cause and correct it immediately.	—

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PERIODIC MAINTENANCE FOR USA AND CANADA

FOR USA AND CANADA : Introduction of Periodic Maintenance

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The following tables show the normal maintenance schedule. Depending upon weather and atmospheric conditions, varying road surfaces, individual driving habits and vehicle usage, additional or more frequent maintenance may be required.

Periodic maintenance beyond the last period shown on the tables requires similar maintenance.

Emission Control System Maintenance

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	5 (8) 6	10 (16) 12	15 (24) 18	20 (32) 24	25 (40) 30	30 (48) 36	35 (56) 42	40 (64) 48	45 (72) 54
Drive belt	NOTE (1)								I*	
Air cleaner filter	NOTE (2)						R			
EVAP vapor lines					I*				I*	
Fuel lines					I*				I*	
Fuel filter	NOTE (3)									
Engine coolant*	NOTE (4)(5)									
Engine oil		R	R	R	R	R	R	R	R	R
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	R	R	R
Spark plugs (Iridium - tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)								
Intake and exhaust valve clearance*	NOTE (7)									

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000)	50 (80)	55 (88)	60 (96)	65 (104)	70 (112)	75 (120)	80 (128)	85 (136)	90 (144)
	Months	60	66	72	78	84	90	96	102	108
Drive belt	NOTE (1)	I*		I*		I*		I*		I*
Air cleaner filter	NOTE (2)			R						R
EVAP vapor lines				I*				I*		
Fuel lines				I*				I*		
Fuel filter	NOTE (3)									
Engine coolant*	NOTE (4)(5)									
Engine oil		R	R	R	R	R	R	R	R	R
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	R	R	R
Spark plugs (Iridium - tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)								
Intake and exhaust valve clearance*	NOTE (7)									

MAINTENANCE OPERATION		MAINTENANCE INTERVAL							Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000)	95	100	105	110	115	120		
	Months	(152)	(160)	(168)	(176)	(184)	(192)		
		114	120	126	132	138	144		
Drive belt	NOTE (1)		I*		I*		I*		MA-13(QR25DE) MA-22(VQ35DE)
Air cleaner filter	NOTE (2)						R		MA-17(QR25DE) MA-26(VQ35DE)

PERIODIC MAINTENANCE

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MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	95 (152) 114	100 (160) 120	105 (168) 126	110 (176) 132	115 (184) 138	120 (192) 144	
EVAP vapor lines			I*				I*	MA-21 (QR25DE) MA-30 (VQ35DE)
Fuel lines			I*				I*	MA-16 (QR25DE) MA-25 (VQ35DE)
Fuel filter	NOTE (3)							—
Engine coolant*	NOTE (4)(5)							MA-13 (QR25DE) MA-22 (VQ35DE)
Engine oil		R	R	R	R	R	R	MA-17 (QR25DE) MA-26 (VQ35DE)
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	MA-18 (QR25DE) MA-27 (VQ35DE)
Spark plugs (Iridium - tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)						MA-20 (QR25DE) MA-29 (VQ35DE)
Intake and exhaust valve clearance*	NOTE (7)							MA-31 (QR25DE) MA-31 (VQ35DE)

NOTE:

- (1) After 40,000 miles (64,000 km) or 48 months, inspect every 10,000 miles (16,000 km) or 12 months. Replace the drive belts if found damaged.
- (2) If operating mainly in dusty conditions, more frequent maintenance may be required.
- (3) Maintenance-free item. For service procedures, refer to the FL section.
- (4) First replacement interval is 105,000 miles (168,000 km) or 84 months. After first replacement, replace every 75,000 miles (120,000 km) or 60 months.
- (5) Use only Genuine NISSAN long life Antifreeze/Coolant (blue) or equivalent with proper mixture ratio of 50% anti-freeze and 50% demineralized or distilled water. Mixing any other type of coolant or the use of non-distilled water will reduce the life expectancy of the factory fill coolant.
- (6) Replace spark plug when the plug gap exceeds 1.25 mm (0.049 in) even if within specified periodic replacement mileage.
- (7) Periodic maintenance is not required. However, if valve noise increases, inspect valve clearance.

* Maintenance items and intervals with "*" are recommended by NISSAN for reliable vehicle operation. The owner need not perform such maintenance in order to maintain the emission warranty or manufacturer recall liability. Other maintenance items and intervals are required.

Chassis and Body Maintenance

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	5 (8) 6	10 (16) 12	15 (24) 18	20 (32) 24	25 (40) 30	30 (48) 36	35 (56) 42	40 (64) 48	45 (72) 54
Brake lines & cables			I		I		I		I	
Brake pads & rotors★			I		I		I		I	
Brake fluid★					R				R	
CVT fluid	NOTE (1)		I		I		I		I	
Steering gear & linkage, axle & suspension parts★					I				I	
Tire rotation	NOTE (2)									
Front drive shaft boots★			I		I		I		I	
Exhaust system★					I				I	
In-cabin microfilter				R			R			R

PERIODIC MAINTENANCE

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MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	50 (80) 60	55 (88) 66	60 (96) 72	65 (104) 78	70 (112) 84	75 (120) 90	80 (128) 96	85 (136) 102	90 (144) 108
Brake lines & cables		I		I		I		I		I
Brake pads & rotors★		I		I		I		I		I
Brake fluid★				R				R		
CVT fluid	NOTE (1)	I		I		I		I		I
Steering gear & linkage, axle & suspension parts★				I				I		
Tire rotation	NOTE (2)									
Front drive shaft boots★		I		I		I		I		I
Exhaust system★				I				I		
In-cabin microfilter				R			R			R

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	95 (152) 114	100 (160) 120	105 (168) 126	110 (176) 132	115 (184) 138	120 (192) 144	
Brake lines & cables			I		I		I	MA-41
Brake pads & rotors★			I		I		I	MA-42
Brake fluid★			R				R	MA-41
CVT fluid	NOTE (1)		I		I		I	MA-32 MA-35
Steering gear & linkage, axle & suspension parts★			I				I	MA-43 MA-44
Tire rotation	NOTE (2)							MA-38 MA-39
Front drive shaft boots★			I		I		I	MA-45
Exhaust system★			I				I	MA-31
In-cabin microfilter				R			R	MA-31

NOTE:

- **Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.**
- (1) Use only Genuine NISSAN CVT fluid. If towing a trailer, using a camper or a car-top carrier or driving on rough or muddy roads, inspect CVT fluid deterioration at NISSAN dealer every 60,000 miles (96,000 km), then change CVT fluid if necessary. And if the inspection is not performed, change (not just inspect) CVT fluid every 60,000 miles (96,000 km). Using transmission fluid other than Genuine NISSAN CVT Fluid will damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.
- (2) Refer to “Tire rotation” under the “GENERAL MAINTENANCE” heading earlier in this section.

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS

The maintenance intervals shown on the preceding pages are for normal operating conditions. If the vehicle is mainly operated under severe driving conditions as shown below, more frequent maintenance must be performed on the following items as shown in the table.

Severe driving conditions

- Repeated short trips of less than 5 miles (8 km).
- Repeated short trips of less than 10 miles (16 km) with outside temperatures remaining below freezing.
- Operating in hot weather in stop-and-go “rush hour” traffic.
- Extensive idling and/or low speed driving for long distances, such as police, taxi or door-to-door delivery use.
- Driving in dusty conditions.
- Driving on rough, muddy, or salt spread roads.

PERIODIC MAINTENANCE

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- Towing a trailer, using a camper or a car-top carrier.

Maintenance operation: Inspect = Inspect and correct or replace as necessary.

Maintenance item	Maintenance operation	Maintenance interval	Reference page
Brake fluid	Replace	Every 10,000 miles (16,000 km) or 12 months	MA-41
Brake pads & rotors	Inspect	Every 5,000 miles (8,000 km) or 6 months	MA-42
Steering gear & linkage, axle & suspension parts	Inspect	Every 5,000 miles (8,000 km) or 6 months	MA-43 MA-44
Front drive shaft boots	Inspect	Every 5,000 miles (8,000 km) or 6 months	MA-45
Exhaust system	Inspect	Every 5,000 miles (8,000 km) or 6 months	MA-31

RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

RECOMMENDED FLUIDS AND LUBRICANTS FOR USA AND CANADA

FOR USA AND CANADA : Fluids and Lubricants

INFOID:000000009464536

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel	QR25DE	68 ℓ	18 gal	15 gal	Unleaded regular gasoline with an octane rating of at least 87 AKI (RON 91)
	VQ35DE				
Engine oil Drain and refill	With oil filter change	QR25DE	4.6 ℓ	4-7/8 qt	For QR25 engine: • Genuine NISSAN engine oil or equivalent • Engine oil with API Certification Mark *1 • Viscosity SAE 0W-20 *2 For VQ35 engine: • Engine oil with API Certification Mark *1 • Viscosity SAE 5W-30 • Genuine NISSAN engine oil or equivalent *3
		VQ35DE	4.8 ℓ	5-1/8 qt	
	Without oil filter change	QR25DE	4.3 ℓ	4-1/2 qt	
		VQ35DE	4.5 ℓ	4-3/4 qt	
Dry engine (engine overhaul)		QR25DE	5.4 ℓ	5-3/4 qt	• Engine oil with API Certification Mark *1 • Viscosity SAE 5W-30 • Genuine NISSAN engine oil or equivalent *3
		VQ35DE	5.3 ℓ	5-5/8 qt	
Cooling system (with reservoir tank at MAX level)		QR25DE	7.9 ℓ	8-3/8 qt	Pre-diluted Genuine NISSAN Long Life Antifreeze/ Coolant (blue) or equivalent
		VQ35DE	9.2 ℓ	9-3/4 qt	
CVT fluid		RE0F10D	7.4 ℓ	7-7/8 qt	Genuine NISSAN CVT Fluid NS-3 *4
		RE0F10E	8.2 ℓ	8-5/8 qt	
Power steering fluid (E-PSF)		1.1 ℓ	1-1/8 qt	1 qt	Genuine NISSAN E-PSF or equivalent *5
Brake fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid *6 or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (lithium soap base)
Windshield washer fluid		4.5 ℓ	4-3/4 qt	4 qt	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze fluid or equivalent
Air conditioner system refrigerant		0.525 ± 0.025 kg	1.158 ± 0.055 lb	1.158 ± 0.055 lb	HFC-134a (R-134a) *7
Air conditioner system oil		150 m ℓ	5.1 fl oz	5.3 fl oz	A/C System Oil Type S (DH-PS) *7

*1: For additional information, see "Engine Oil Recommendation".

*2: As an alternative to this recommended oil, SAE 5W-30 conventional petroleum based oil may be used and meet all specifications and requirements necessary to maintain the New Vehicle Limited Warranty.

*3: NISSAN recommends Genuine NISSAN Ester Oil available at a NISSAN dealer.

***4: Use only Genuine NISSAN CVT Fluid NS-3, using automatic transmission fluid other than Genuine NISSAN CVT Fluid NS-3 will damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.**

*5: Use of a power steering fluid other than Genuine NISSAN E-PSF will prevent the power steering system from operating properly.

*6: Available in mainland U.S.A. through a NISSAN dealer.

*7: For additional information, see "Air conditioner specification label".

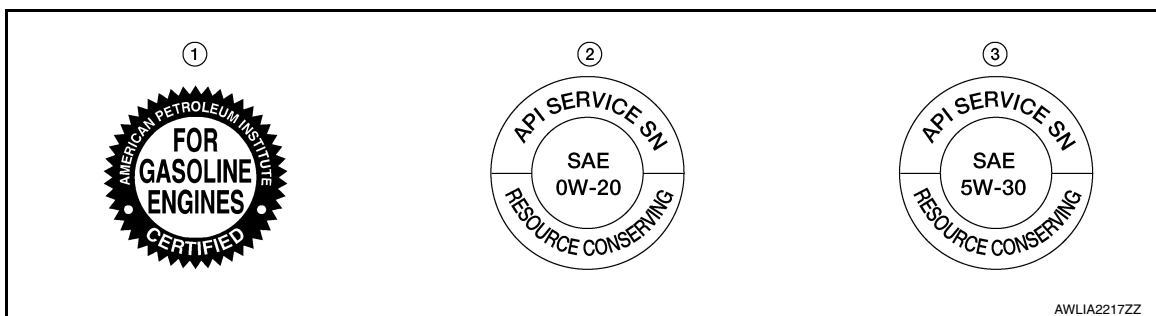
FOR USA AND CANADA : Engine Oil Recommendation

INFOID:000000009464537

NISSAN recommends the use of an energy conserving oil in order to improve fuel economy. Select only engine oils that meet the American Petroleum Institute (API) certification and International Lubricant Standardization and Approval Committee (ILSAC) certification and SAE viscosity standard. These oils have the API certification mark on the front of the container. Oils which do not have the specified quality label should not be used as they could cause engine damage.

RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >



1. API certification mark 2. API service symbol (QR25DE) 3. API service symbol (VQ35DE)

FOR USA AND CANADA : Engine Coolant Mixture Ratio

INFOID:000000009464538

The engine cooling system is filled at the factory with a pre-diluted mixture of 50% Genuine NISSAN Long Life Antifreeze/Coolant (blue) and 50% water to provide year-round anti-freeze and coolant protection. The anti-freeze solution contains rust and corrosion inhibitors. Additional engine cooling system additives are not necessary.

WARNING:

- Do not remove the radiator or coolant reservoir cap when the engine is hot. Wait until the engine and radiator cool down. Serious burns could be caused by high pressure fluid escaping from the radiator.
- The radiator is equipped with a pressure type radiator cap. To prevent engine damage, use only a genuine NISSAN radiator cap.

CAUTION:

- When adding or replacing coolant, be sure to use only Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent. Genuine NISSAN Long Life Antifreeze/Coolant (blue) is pre-diluted to provide antifreeze protection to -34°F (-37°C). If additional freeze protection is needed due to weather where you operate your vehicle, add Genuine NISSAN Long Life Antifreeze/Coolant (blue) concentrate following the directions on the container. If an equivalent coolant other than Genuine NISSAN Long Life Antifreeze/Coolant (blue) is used, follow the coolant manufacturer's instructions to maintain minimum antifreeze protection to -34°F (-37°C). The use of other types of coolant solutions other than Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent may damage the engine cooling system.
- Mixing any other type of coolant other than Genuine NISSAN Long Life Antifreeze/Coolant (blue), including Genuine NISSAN Long Life Antifreeze/Coolant (green), or the use of non-distilled water will reduce the life expectancy of the factory-fill coolant.

ENGINE MAINTENANCE (QR25DE)

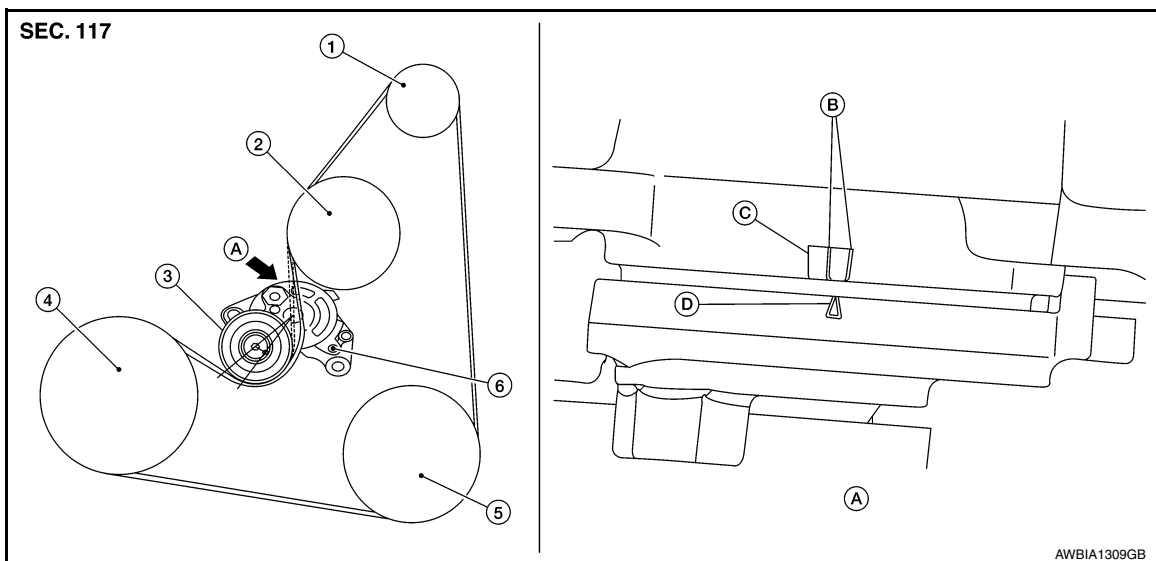
< PERIODIC MAINTENANCE >

ENGINE MAINTENANCE (QR25DE)

DRIVE BELTS

DRIVE BELTS : Checking Drive Belts

INFOID:000000009464542



- | | | |
|----------------------|--------------------------|------------------------------|
| 1. Generator pulley | 2. Water pump pulley | 3. Drive belt auto-tensioner |
| 4. Crankshaft pulley | 5. A/C compressor pulley | 6. Drive belt retainer boss |
| A. View A | B. New drive belt range | C. Allowable use range |
| D. Indicator (notch) | | |

WARNING:

Inspect the drive belt only when the engine is stopped.

1. Visually check entire drive belt for wear, damage or cracks.
2. Check that the drive belt auto-tensioner indicator is within the possible use range.

NOTE:

- When new drive belt is installed, the drive belt auto-tensioner indicator should be within the new drive belt range.
 - Check the drive belt auto-tensioner indicator when the engine is cold.
3. If the drive belt auto-tensioner indicator is out of the possible use range or belt is damaged, replace drive belt.

DRIVE BELTS : Tension Adjustment

INFOID:000000009464543

Belt tension is not manually adjustable, it is automatically adjusted by the drive belt auto-tensioner.

ENGINE COOLANT

ENGINE COOLANT : System Inspection

INFOID:000000009464544

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high-pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing it down and turning it all the way.

CHECKING COOLING SYSTEM HOSES

Check hoses for the following:

- Improper attachment
- Leaks
- Cracks
- Damage

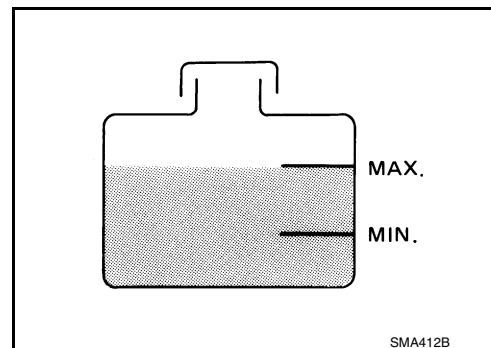
ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

- Loose connections
- Chafing
- Deterioration

CHECKING RESERVOIR LEVEL

- Check if the reservoir tank coolant level is within MIN to MAX when the engine is cool.
- Adjust coolant level if it is too much or too little.



ENGINE COOLANT : Changing Engine Coolant

INFOID:000000009464545

WARNING:

- To avoid being scalded, do not change the coolant when the engine is hot.
- Wrap a thick cloth around cap and carefully remove the cap. First, turn the cap a quarter of a turn to release built-up pressure. Then push down and turn the cap all the way to remove.

DRAINING ENGINE COOLANT

1. Remove the engine under cover. Refer to [EXT-17. "Removal and Installation"](#).
2. Open the radiator drain plug at the bottom of the radiator and remove the radiator filler cap. This is the only step required when partially draining the cooling system (radiator only).

CAUTION:

- Do not allow the coolant to contact the drive belt.
- Perform this step when engine is cold.

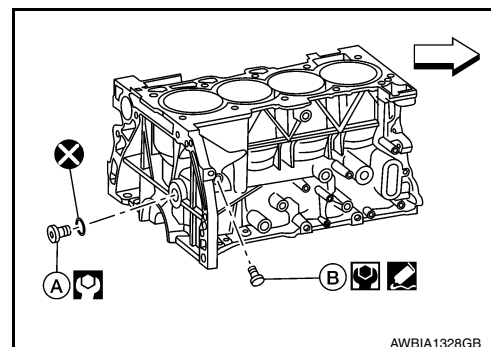
3. Follow this step for heater core removal/replacement only. Disconnect the upper heater hose at the engine side and apply moderate air pressure [103.46 kPa (1.055 kg/cm², 15 psi) maximum air pressure] into the hose for 30 seconds to blow the excess coolant out of the heater core.
4. When draining all of the coolant in the system, remove the reservoir tank and drain the coolant, then clean the reservoir tank before installation.

CAUTION:

- Do not allow the coolant to contact the drive belt.
- Perform this step when engine is cold.

5. When draining all of the coolant in the system for engine removal or repair, open the drain plugs (A and B) on the cylinder block.

↔: Front



6. Check the drained coolant for contaminants such as rust, corrosion or discoloration. If the coolant is contaminated, flush the engine cooling system.

REFILLING ENGINE COOLANT

ENGINE MAINTENANCE (QR25DE)

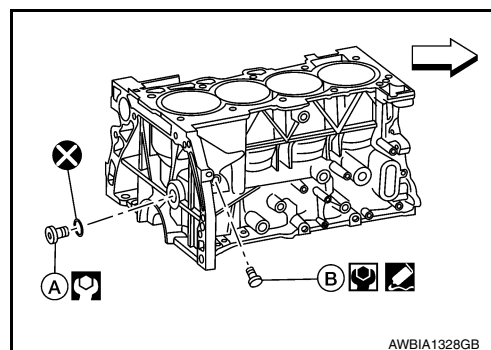
< PERIODIC MAINTENANCE >

1. Install the radiator drain plug. Install the reservoir tank and cylinder block drain plug, if removed for a total system drain or for engine removal or repair.
 - The radiator must be completely empty of coolant and water.
 - Apply sealant to the threads of the cylinder block drain plug. Use Genuine High Performance Thread Sealant or equivalent. Refer to [GI-21, "Recommended Chemical Products and Sealants"](#).

↔: Front

CAUTION:

Do not reuse copper sealing washers.



Radiator drain plug	: Refer to CO-16, "Exploded View" .
Cylinder block drain plug (A)	: 54 Nm (5.5 kg-m, 40 ft-lb)
Cylinder block drain plug (B)	: 9.8 N·m (1.0 kg-m, 87 in-lb)

2. If disconnected, reattach the upper radiator hose at the engine side.
3. Set the vehicle heater controls to the full HOT and heater ON position. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
4. Install the Tool by installing the radiator cap adapter onto the radiator neck opening. Then attach the gauge body assembly with the refill tube and the venturi assembly to the radiator cap adapter.

Tool number : KV991J0070 (J-45695)

5. Insert the refill hose into the coolant mixture container that is placed at floor level. Make sure the ball valve is in the closed position.
 - Use recommended coolant or equivalent.Refer to [MA-11, "FOR USA AND CANADA : Fluids and Lubricants"](#).

CAUTION:

Do not use any cooling system additives such as radiator sealer. Additives may clog the cooling system and cause damage to the engine, transmission and/or cooling system.

Engine coolant capacity : Refer to [CO-26, "Capacity"](#).
(with reservoir tank)

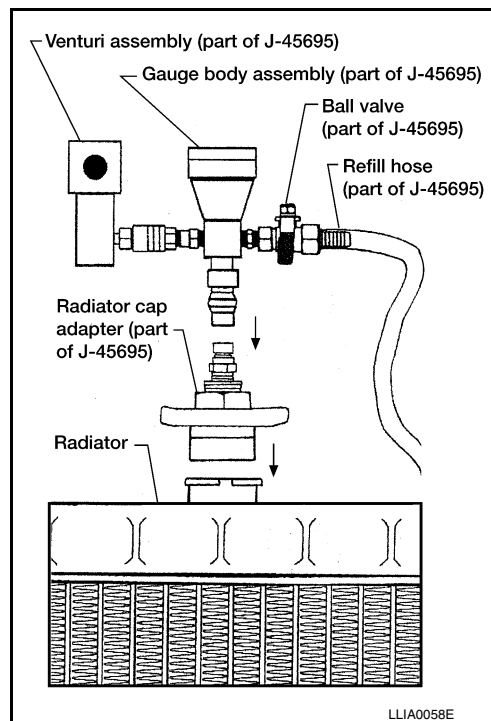
6. Install an air hose to the venturi assembly, the air pressure must be within specification.

Compressed air supply pressure : 549 - 824 kPa (5.6 - 8.4 kg/cm², 80 - 119 psi)

CAUTION:

The compressed air supply must be equipped with an air dryer.

7. The vacuum gauge will begin to rise and there will be an audible hissing noise. During this process open the ball valve on the refill hose slightly. Coolant will be visible rising in the refill hose. Once the refill hose is full of coolant, close the ball valve. This will purge any air trapped in the refill hose.

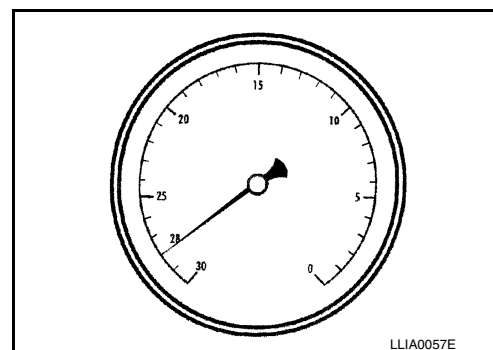


ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

8. Continue to draw the vacuum until the gauge reaches 28 inches of vacuum. The gauge may not reach 28 inches in high altitude locations, use the vacuum specifications based on the altitude above sea level.

Altitude above sea level	Vacuum gauge reading
0 - 100 m (328 ft)	: 28 inches of vacuum
300 m (984 ft)	: 27 inches of vacuum
500 m (1,641 ft)	: 26 inches of vacuum
1,000 m (3,281 ft)	: 24 - 25 inches of vacuum



9. When the vacuum gauge has reached the specified amount, disconnect the air hose and wait 20 seconds to see if the system loses any vacuum. If the vacuum level drops, perform any necessary repairs to the system and repeat steps 6 - 8 to bring the vacuum to the specified amount. Recheck for any leaks.
10. Place the coolant container (with the refill hose inserted) at the same level as the top of the radiator. Then open the ball valve on the refill hose so the coolant will be drawn up to fill the cooling system. The cooling system is full when the vacuum gauge reads zero.

CAUTION:

Do not allow the coolant container to get too low when filling, to avoid air from being drawn into the cooling system.

11. Remove the Tool from the radiator neck opening.
12. Fill the cooling system reservoir tank to the specified level and install the radiator cap. Run the engine to warm up the cooling system and top up the system as necessary.
13. Install the engine under cover. Refer to [EXT-17, "Removal and Installation"](#).

FLUSHING COOLING SYSTEM

- Fill the radiator from the filler neck above the radiator upper hose and reservoir tank with clean water and reinstall the radiator filler cap.
- Run the engine until it reaches normal operating temperature.
- Rev the engine two or three times under no-load.
- Stop the engine and wait until it cools down.
- Drain the water from the system. Refer to [CO-12, "Changing Engine Coolant"](#).
- Repeat steps 1 through 5 until clear water begins to drain from the radiator.

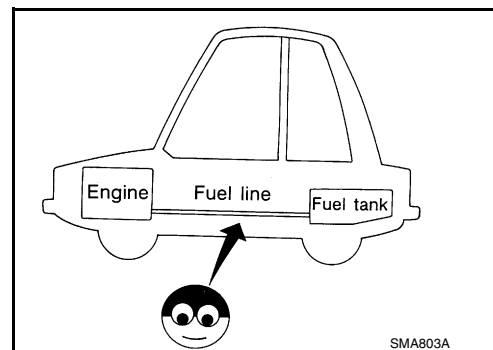
FUEL LINES

FUEL LINES : Inspection

INFOID:000000009464546

Inspect fuel lines, fuel filler cap and fuel tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.

If necessary, repair or replace damaged parts.



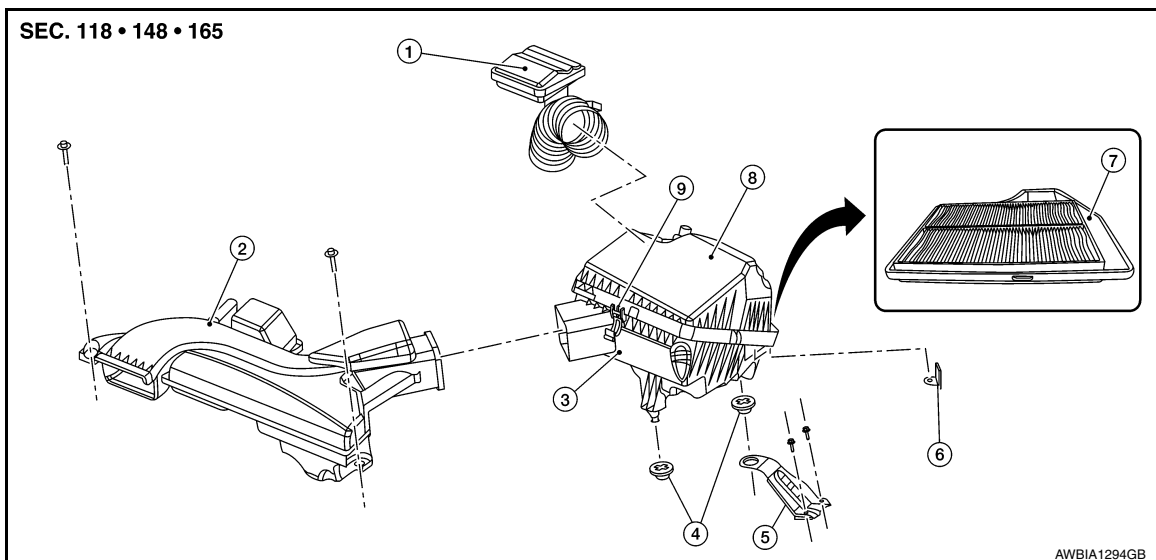
AIR CLEANER FILTER

ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

AIR CLEANER FILTER : Removal and Installation

INFOID:000000009464547



- | | | |
|--------------------------------|---------------------------------|---------------------------------|
| 1. Air duct hose and resonator | 2. Front air duct | 3. Air cleaner case (bottom) |
| 4. Grommets | 5. Air cleaner mounting bracket | 6. Air cleaner mounting bracket |
| 7. Air cleaner filter | 8. Air cleaner case (top) | 9. Air cleaner case clips |

CHANGING THE AIR CLEANER FILTER

1. Release the air cleaner case clips.
2. Open the air cleaner case (top).
3. Remove the air cleaner filter.
4. Install a new air cleaner filter.
5. Close the air cleaner case (top).
6. Secure the air cleaner case clips.

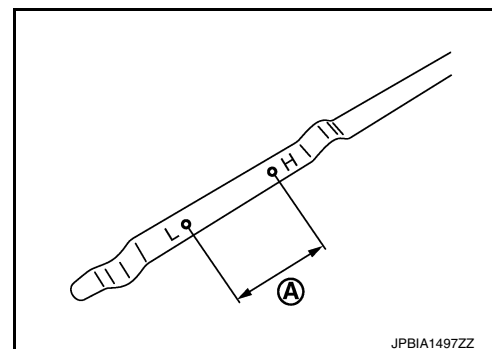
ENGINE OIL

ENGINE OIL : Inspection

INFOID:000000009464548

OIL LEVEL

- Before starting the engine, check the oil level. If the engine is already started, stop it and allow 10 minutes before checking.
- Check that the oil level is within the range (A) on the oil level gauge.
- If it is out of range, add oil as necessary.



ENGINE OIL : Changing Engine Oil

INFOID:000000009464549

WARNING:

- Be careful not to burn yourself, as the engine oil may be hot.

ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

- **Prolonged and repeated contact with used engine oil may cause skin cancer: try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.**

1. Position the vehicle so it is level on the hoist.
2. Warm up the engine and check for oil leaks from the engine.
3. Stop engine and wait for 10 minutes.
4. Remove the oil pan drain plug (1) and oil filler cap.

↩ : Front

5. Drain the engine oil.
6. Install the oil pan drain plug with a new washer and refill the engine with new engine oil.

Oil specification and viscosity : Refer to [MA-11, "FOR USA AND CANADA : Engine Oil Recommendation"](#).

Oil pan drain plug : 34.3 N·m (3.5 kg-m, 25 ft-lb)

CAUTION:

- Be sure to clean the oil pan drain plug and install using a new washer.
- The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only. Always use the oil level gauge to determine when the proper amount of oil is in the engine.

7. Warm up the engine and check around the drain plug and oil filter for oil leaks.
8. Stop the engine and wait for 10 minutes.
9. Check the oil level using the oil level gauge.

CAUTION:

Do not overfill the engine with engine oil.

OIL FILTER

OIL FILTER : Removal and Installation

INFOID:000000009464550

REMOVAL

1. Remove fender protector side cover (RH). Refer to [EXT-26, "FENDER PROTECTOR : Removal and Installation"](#).
2. Drain engine oil. Refer to [LU-10, "Changing Engine Oil"](#)
3. Remove the oil filter using suitable tool.

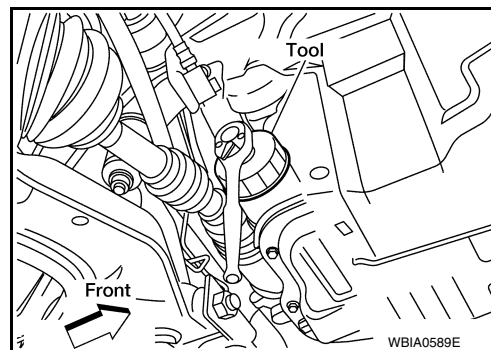
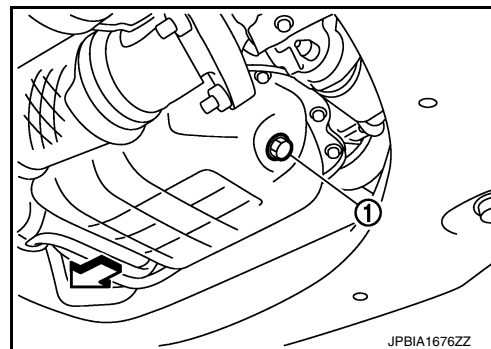
Tool number : KV10115801 (J-38956)

WARNING:

- Be careful not to get burned, the engine and engine oil may be hot.

CAUTION:

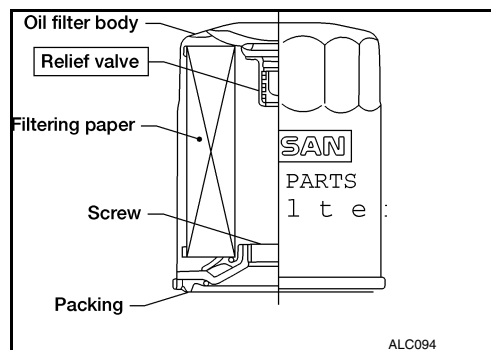
- When removing, prepare a shop cloth to absorb any oil leakage or spillage.
- Do not allow engine oil to adhere to the drive belts.
- Completely wipe off any oil that adheres to the engine and the vehicle.



ENGINE MAINTENANCE (QR25DE)

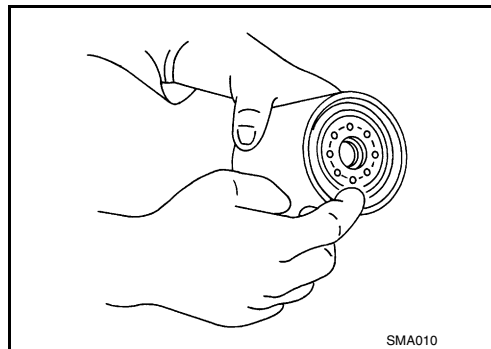
< PERIODIC MAINTENANCE >

- The oil filter has a built in pressure relief valve. Use a Genuine NISSAN oil filter or equivalent.



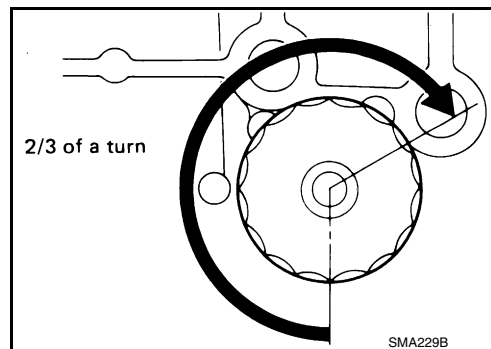
INSTALLATION

1. Remove foreign materials adhering to the oil filter installation surface.
2. Apply clean engine oil to the oil seal contact surface of the new oil filter.



3. Screw the oil filter manually until it touches the installation surface, then tighten it by 2/3 turn. Or tighten to specification below.

Oil filter : 18.0 N·m (1.8 kg-m, 13 ft-lb)



4. Refill engine with new engine oil. Refer to [LU-10, "Changing Engine Oil"](#).
5. After warming up the engine, check for engine oil leaks. Repair as necessary.
6. Install fender protector side cover (RH). Refer to [EXT-26, "FENDER PROTECTOR : Removal and Installation"](#).

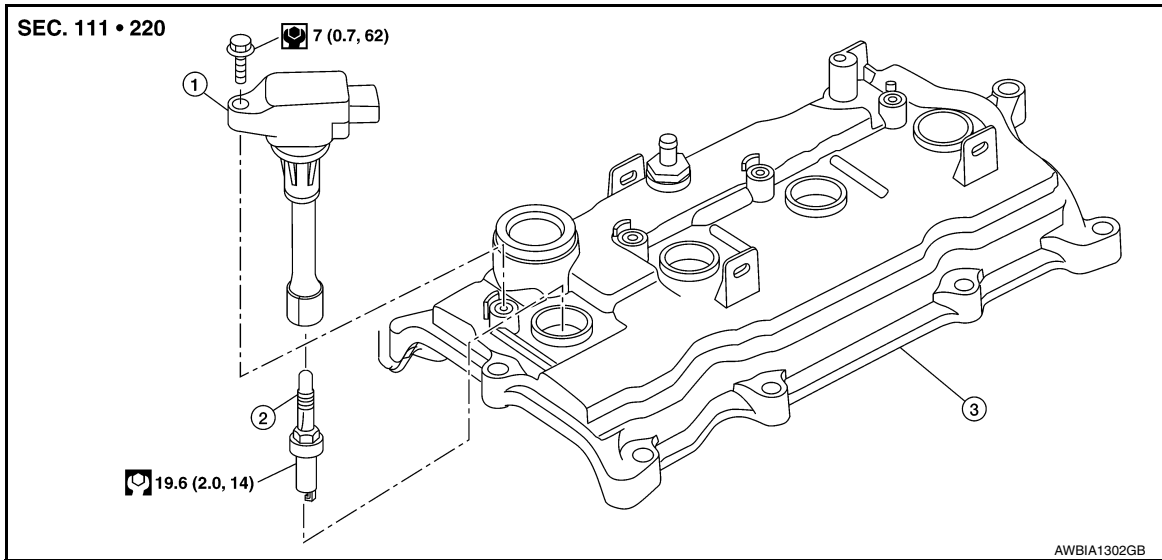
SPARK PLUG

ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

SPARK PLUG : Removal and Installation

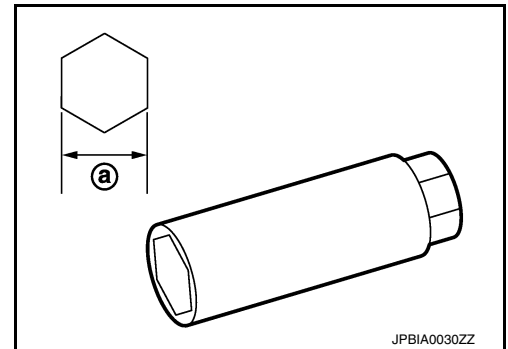
INFOID:000000009464551



REMOVAL

1. Remove engine room cover. Refer to [EM-28, "Removal and Installation"](#).
2. Remove the ignition coil. Refer to [EM-40, "Removal and Installation"](#).
3. Remove the spark plug with a suitable tool.

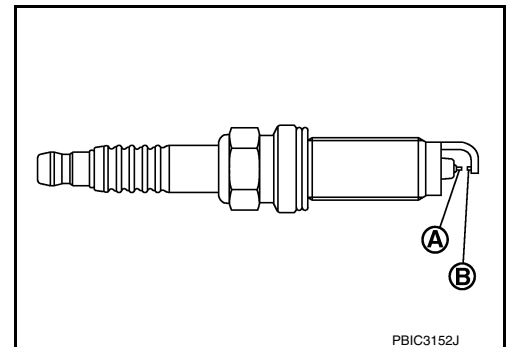
(a): 14 mm (0.55 in)



INSPECTION AFTER REMOVAL

Visually check the electrode for dirt and wear and the insulator for burning.

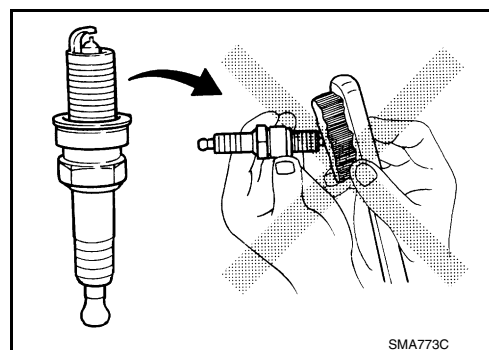
- (A) : Iridium alloy
(B) : Platinum alloy



ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

- Do not use a wire brush for cleaning the spark plugs. Replace as necessary.



- If plug is covered with carbon, a spark plug cleaner may be used.

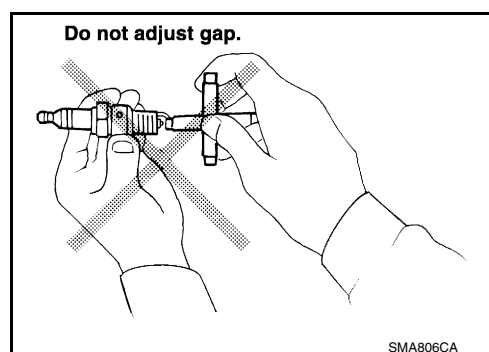
Cleaner air pressure : less than 588 kPa (6 kg/cm², 85 psi)

Cleaning time : less than 20 seconds

- Checking and adjusting plug gap is not required between change intervals. If the gap is out of specification, replace the spark plug.

CAUTION:

Do not drop or shock plug.



INSTALLATION

Installation is in the reverse order of removal.

Standard type*	DENSO
	FXE20HE11C
Gap (nominal)	1.1 mm (0.043 in)

*: Always check with the Parts Department for the latest parts information.

EVAP VAPOR LINES

EVAP VAPOR LINES : Inspection

INFOID:000000009464552

- Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
- Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.

ENGINE MAINTENANCE (VQ35DE)

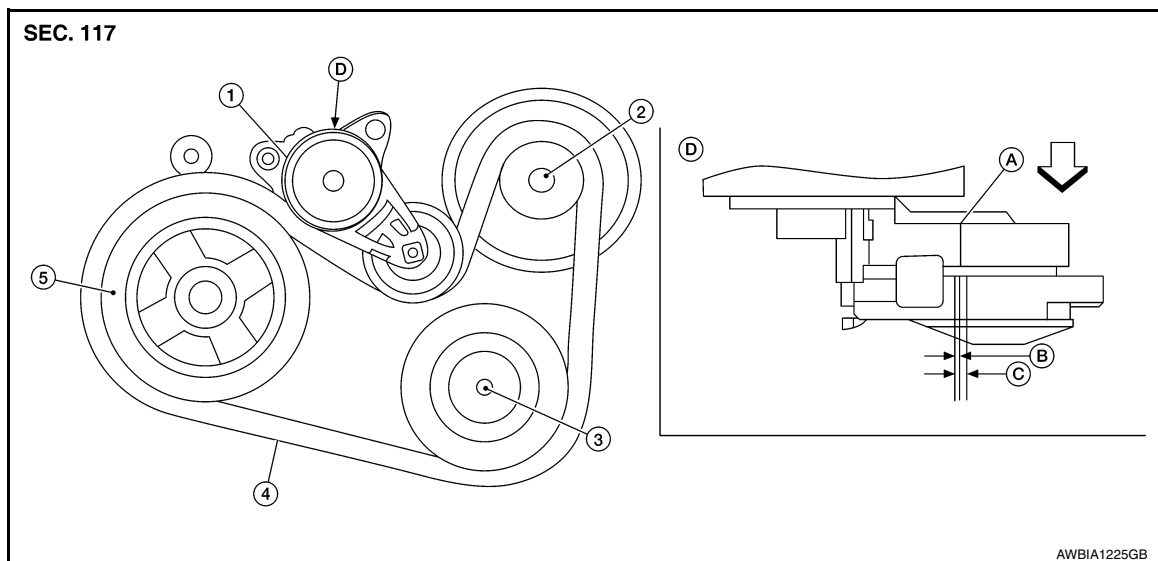
< PERIODIC MAINTENANCE >

ENGINE MAINTENANCE (VQ35DE)

DRIVE BELTS

DRIVE BELTS : Checking Drive Belts

INFOID:000000009464553



- | | | |
|---|-----------------------|-------------------|
| 1. Drive belt auto-tensioner | 2. Generator | 3. A/C compressor |
| 4. Drive belt | 5. Crankshaft pulley | A. Indicator |
| B. Range when new drive belt is installed | C. Possible use range | D. View D |
- ⇐ Engine front

WARNING:

Inspect and check the drive belts with the engine off.

1. Inspect belt for cracks, fraying, wear or oil adhesion. If necessary, replace with a new one.
2. Rotate the crankshaft pulley two times then ensure the drive belt auto-tensioner is within the possible use range.

NOTE:

Inspect drive belt tension when engine is cold.

DRIVE BELTS : Tension Adjustment

INFOID:000000009464554

Belt tension is not manually adjustable, it is automatically adjusted by the drive belt auto-tensioner.

ENGINE COOLANT

ENGINE COOLANT : System Inspection

INFOID:000000009464555

CHECKING COOLING SYSTEM HOSES

Check hoses for the following:

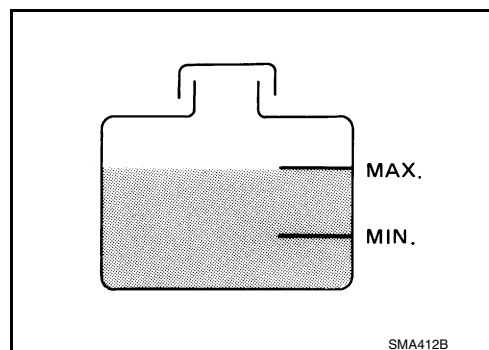
- Improper attachment
- Leaks
- Cracks
- Damage
- Loose connections
- Chafing
- Deterioration

CHECKING RESERVOIR LEVEL

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

- Check if the reservoir tank coolant level is within MIN to MAX range when the engine is cool.
- Adjust coolant level if it is too much or too little.



ENGINE COOLANT : Changing Engine Coolant

INFOID:000000009464556

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high-pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing it down and turning it all the way.

DRAINING ENGINE COOLANT

1. Remove the engine under cover. Refer to [EXT-17. "Removal and Installation"](#).
2. Open the radiator drain plug at the bottom of the radiator and remove the radiator filler cap. This is the only step required when partially draining the cooling system (radiator only).

CAUTION:

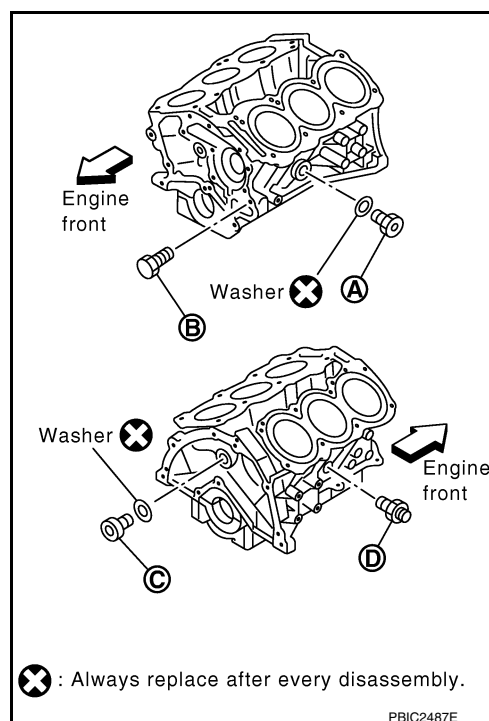
- **Do not allow the coolant to contact the drive belts.**
- **Perform this step when engine is cold.**

3. Follow this step for heater core removal/replacement only. Disconnect the upper heater hose at the engine side and apply moderate air pressure [103.46 kPa (1.055 kg/cm², 15 psi) maximum air pressure] into the hose for 30 seconds to blow the excess coolant out of the heater core.
4. When draining all of the coolant in the system, remove the reservoir tank and drain the coolant, then clean the reservoir tank before installation.

CAUTION:

- **Do not allow the coolant to contact the drive belts.**
- **Perform this step when engine is cold.**

5. When draining all of the coolant in the system for engine removal or repair, open all of the drain plugs (A-D) on the cylinder block.
6. Check the drained coolant for contaminants such as rust, corrosion or discoloration.
If the coolant is contaminated, flush the engine cooling system.



ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

REFILLING ENGINE COOLANT

1. Install the radiator drain plug. If the cooling system was drained completely, install the reservoir tank and the cylinder block drain plugs.
 - **The radiator must be completely empty of coolant and water.**
 - **Apply sealant to the threads of the cylinder block drain plug. Use Genuine High Performance Thread Sealant or equivalent. Refer to [GI-21, "Recommended Chemical Products and Sealants"](#).**

CAUTION:

Do not reuse copper sealing washers.

Radiator drain plug	: Refer to CO-16, "Exploded View"
Cylinder block front drain plug (LH) (A) (except Canada)	: 62.0 N·m (6.3 kg-m, 46 ft-lb)
Cylinder block water drain plug (B)	: 6.0 N·m (0.6 kg-m, 53 in-lb)
Cylinder block rear drain plug (C)	: 78.0 N·m (8.0 kg-m, 58 ft-lb)
Cylinder block RH banjo bolt (D) (oil cooler)	: 19.6 N·m (2.0 kg-m, 14 ft-lb)

2. If disconnected, reattach the upper radiator hose at the engine side.
3. Set the vehicle heater controls to the full HOT and heater ON position. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
4. Install the Tool by installing the radiator cap adapter onto the radiator neck opening. Then attach the gauge body assembly with the refill tube and the venturi assembly to the radiator cap adapter.

Tool number : KV991J0070 (J-45695)

5. Insert the refill hose into the coolant mixture container that is placed at floor level. Make sure the ball valve is in the closed position.
 - **Use recommended coolant or equivalent.**Refer to [MA-11, "FOR USA AND CANADA : Fluids and Lubricants"](#).

CAUTION:

Do not use any cooling system additives such as radiator sealer. Additives may clog the cooling system and cause damage to the engine, transmission and/or cooling system.

Engine coolant capacity : Refer to [CO-53, "Capacity"](#).
(with reservoir tank)

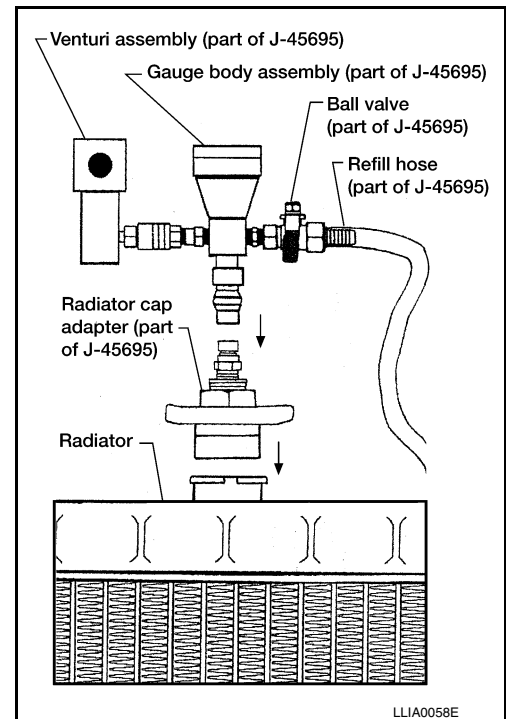
6. Install an air hose to the venturi assembly, the air pressure must be within specification.

Compressed air supply pressure : 549 - 824 kPa (5.6 - 8.4 kg/cm², 80 - 119 psi)

CAUTION:

The compressed air supply must be equipped with an air dryer.

7. The vacuum gauge will begin to rise and there will be an audible hissing noise. During this process open the ball valve on the refill hose slightly. Coolant will be visible rising in the refill hose. Once the refill hose is full of coolant, close the ball valve. This will purge any air trapped in the refill hose.

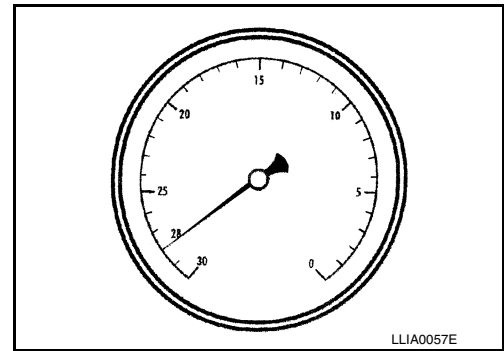


ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

8. Continue to draw the vacuum until the gauge reaches 28 inches of vacuum. The gauge may not reach 28 inches in high altitude locations, use the vacuum specifications based on the altitude above sea level.

Altitude above sea level	Vacuum gauge reading
0 - 100 m (328 ft)	: 28 inches of vacuum
300 m (984 ft)	: 27 inches of vacuum
500 m (1,641 ft)	: 26 inches of vacuum
1,000 m (3,281 ft)	: 24 - 25 inches of vacuum



9. When the vacuum gauge has reached the specified amount, disconnect the air hose and wait 20 seconds to see if the system loses any vacuum. If the vacuum level drops, perform any necessary repairs to the system and repeat steps 6 - 8 to bring the vacuum to the specified amount. Recheck for any leaks.
10. Place the coolant container (with the refill hose inserted) at the same level as the top of the radiator. Then open the ball valve on the refill hose so the coolant will be drawn up to fill the cooling system. The cooling system is full when the vacuum gauge reads zero.

CAUTION:

Do not allow the coolant container to get too low when filling, to avoid air from being drawn into the cooling system.

11. Remove the Tool from the radiator neck opening.
12. Fill the cooling system reservoir tank to the specified level and install the radiator cap. Run the engine to warm up the cooling system and top up the system as necessary.
13. Install the engine under cover. Refer to [EXT-17. "Removal and Installation"](#).

FLUSHING COOLING SYSTEM

1. Fill the radiator from the filler neck above the radiator upper hose and reservoir tank with clean water and reinstall radiator filler cap.
2. Run the engine until it reaches normal operating temperature.
3. Rev the engine two or three times under no-load.
4. Stop the engine and wait until it cools down.
5. Drain the water from the system. Refer to [CO-36. "Changing Engine Coolant"](#).
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

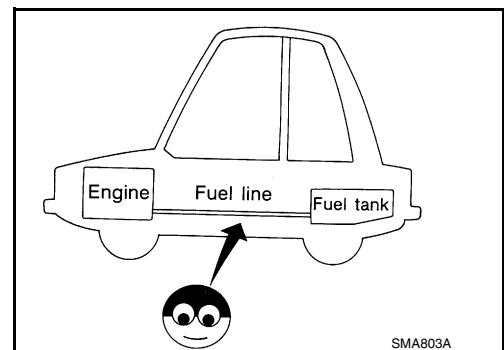
FUEL LINES

FUEL LINES : Inspection

INFOID:000000009464557

Inspect fuel lines, fuel filler cap and fuel tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.

If necessary, repair or replace damaged parts.



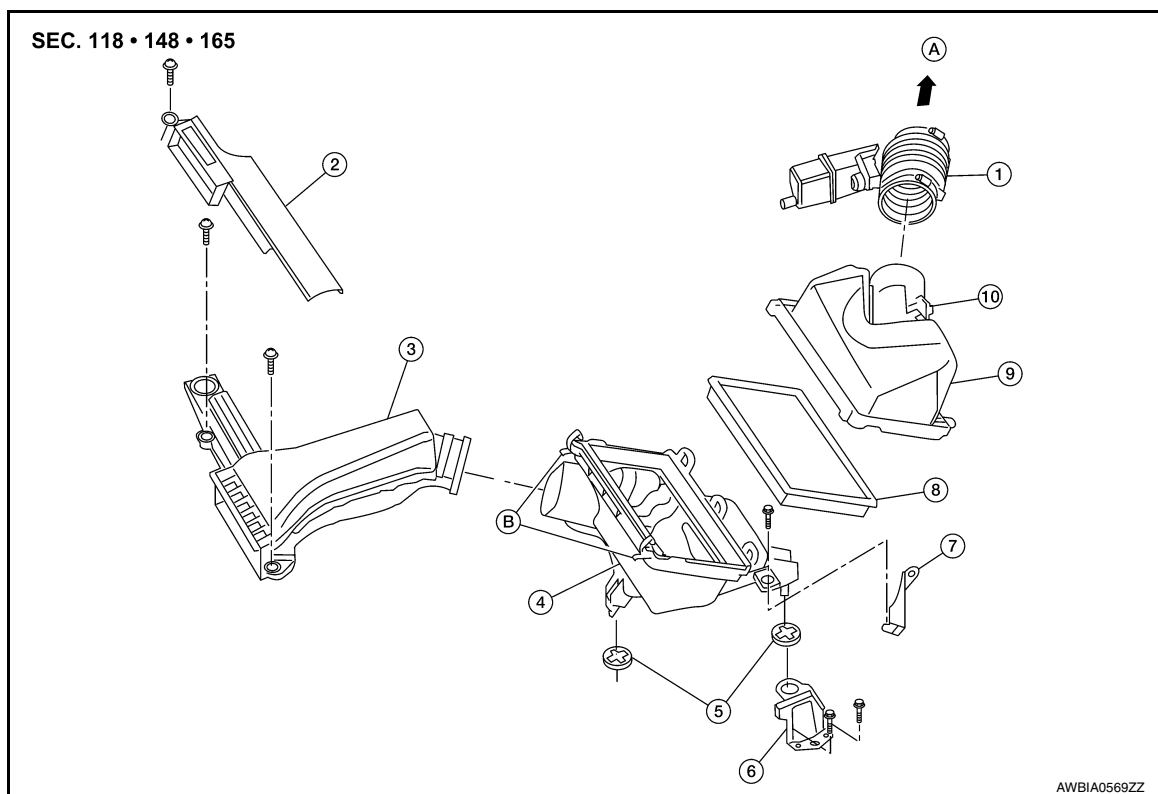
AIR CLEANER FILTER

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

AIR CLEANER FILTER : Removal and Installation

INFOID:000000009464558



- | | | |
|---|--|--------------------------------------|
| 1. Air duct hose and resonator assembly | 2. Duct sub-cover | 3. Front air duct |
| 4. Air cleaner case (lower) | 5. Grommets | 6. Air cleaner case mounting bracket |
| 7. Bracket | 8. Air cleaner filter | 9. Air cleaner case (upper) |
| 10. Mass air flow sensor | A. To electric throttle control actuator | B. Air cleaner case side clips |

REMOVAL

CAUTION:

It is not necessary to remove the front air duct to replace the air cleaner filter.

NOTE:

Replace the air cleaner filter per the periodic maintenance schedule or as necessary. Refer to [MA-7. "FOR USA AND CANADA : Introduction of Periodic Maintenance"](#).

1. Unhook air cleaner case side clips and lift air cleaner case (upper).
2. Remove the air cleaner filter.

INSTALLATION

Installation is in the reverse order of removal.

ENGINE OIL

ENGINE OIL : Inspection

INFOID:000000009464559

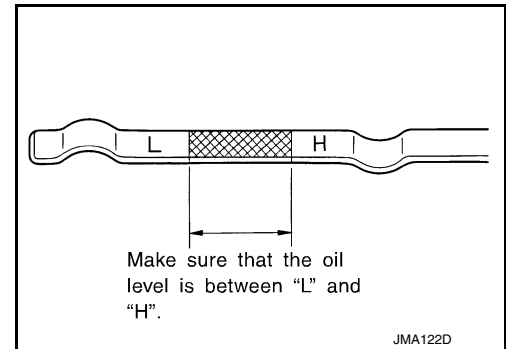
OIL LEVEL

NOTE:

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

- Before starting the engine, check the oil level. If the engine is already started, stop it and allow 10 minutes before checking.
- Check that the oil level is within the range as indicated on the oil level gauge.
- If it is out of range, add oil as necessary.



ENGINE OIL : Changing Engine Oil

INFOID:000000009464560

WARNING:

- Be careful not to burn yourself, as the engine oil may be hot.
- Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

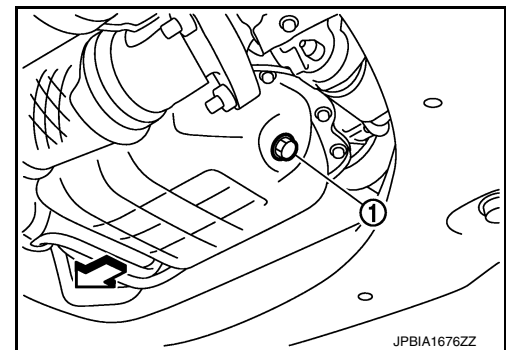
1. Position the vehicle so it is level on the hoist.
2. Warm up the engine and check for oil leaks from the engine.
3. Stop engine and wait for 10 minutes.
4. Remove the oil pan drain plug (1) and oil filler cap.

⇐ : Front

5. Drain the engine oil.
6. Install the oil pan drain plug (1) with a new washer and refill the engine with new engine oil.

Oil specification and viscosity : Refer to [MA-11, "FOR USA AND CANADA : Fluids and Lubricants"](#).

Oil pan drain plug : 34.3 N·m (3.5 kg-m, 25 ft-lb)



CAUTION:

- Be sure to clean the oil pan drain plug and install with a new washer.
- The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only. Always use the dipstick to determine when the proper amount of oil is in the engine.

7. Warm up the engine and check around the oil pan drain plug and oil filter for oil leaks.
8. Stop engine and wait for 10 minutes.
9. Check the engine oil level using the oil level gauge.

CAUTION:

Do not overfill the engine with engine oil.

OIL FILTER

OIL FILTER : Removal and Installation

INFOID:000000009464561

REMOVAL

1. Drain engine oil. Refer to [LU-26, "Changing Engine Oil"](#).
2. Remove the fender protector side cover (RH). Refer to [EXT-26, "FENDER PROTECTOR : Removal and Installation"](#).

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

3. Remove the oil filter using Tool (A) as shown.

Tool number : KV10115801 (J-38956)

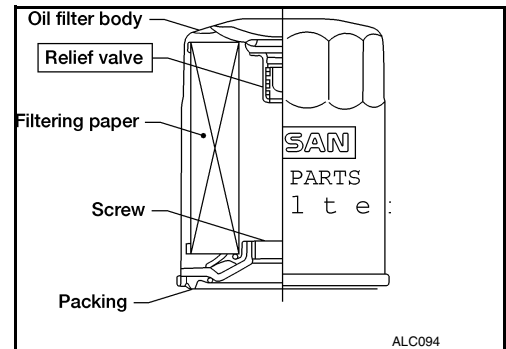
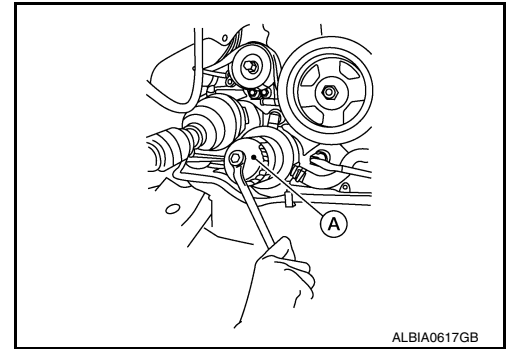
WARNING:

- Be careful not to get burned, the engine and engine oil may be hot.

CAUTION:

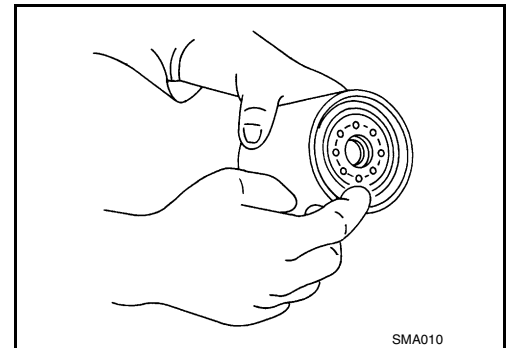
- When removing, prepare a shop cloth to absorb any oil leakage or spillage.
- Do not allow engine oil to adhere to the drive belts.
- Completely wipe off any oil that adheres to the engine and the vehicle.

- The oil filter has a built in pressure relief valve. Use a Genuine NISSAN oil filter or equivalent.



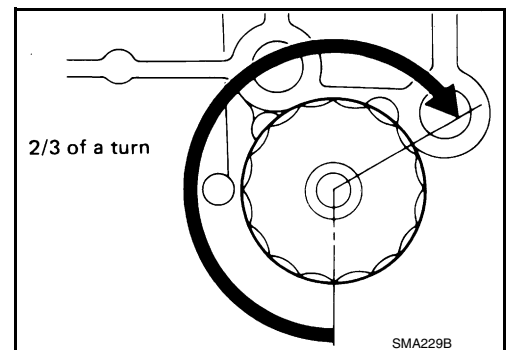
INSTALLATION

1. Remove foreign materials adhering to the oil filter installation surface.
2. Apply clean engine oil to the oil seal contact surface of the new oil filter.



3. Screw the oil filter manually until it touches the installation surface, then tighten it by 2/3 turn. Or tighten to specification below.

Oil filter : 18.0 N·m (1.8 kg-m, 13 ft-lb)



4. Refill engine with new engine oil. Refer to [LU-26, "Changing Engine Oil"](#).
5. After warming up the engine, check for any engine oil leaks.
6. Install the fender protector side cover (RH). Refer to [EXT-26, "FENDER PROTECTOR : Removal and Installation"](#).

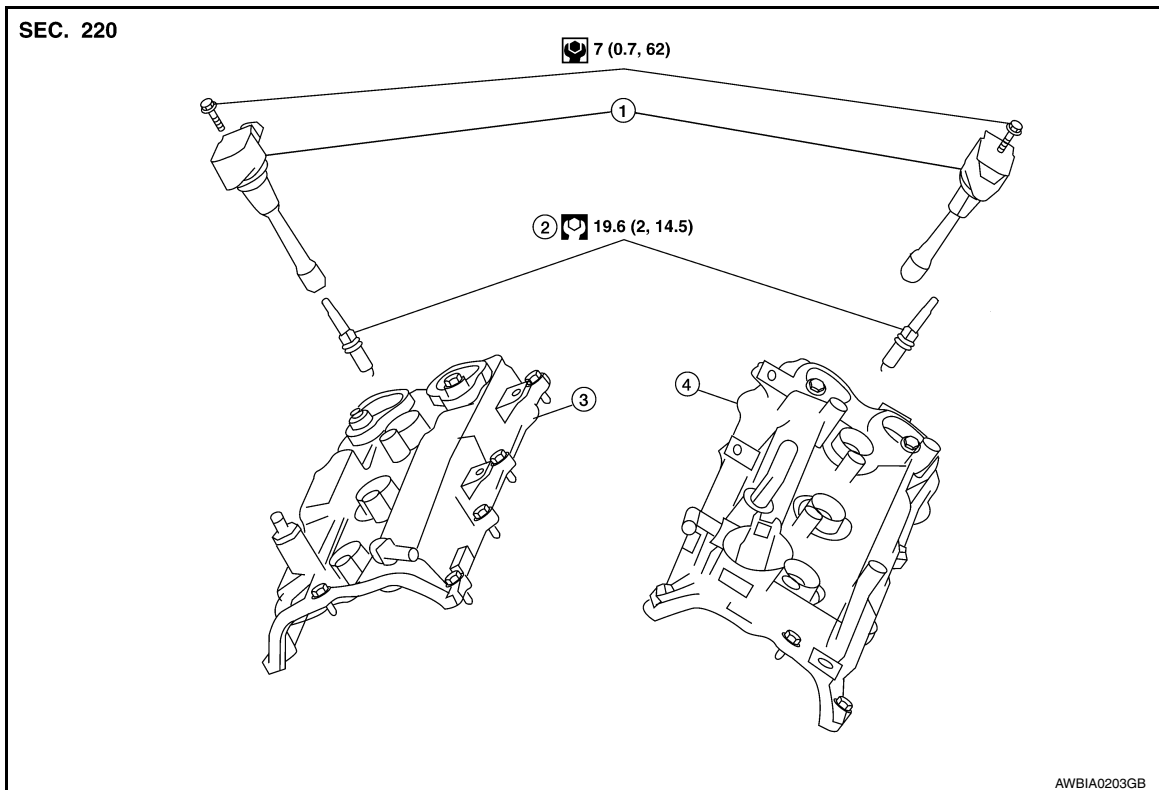
SPARK PLUG

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

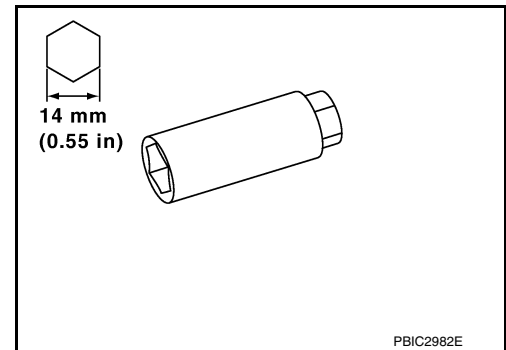
SPARK PLUG : Removal and Installation

INFOID:000000009464562



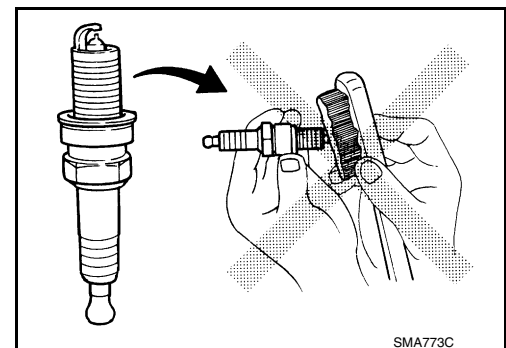
REMOVAL

1. Remove the ignition coil. Refer to [EM-162. "Removal and Installation LH"](#) (LH side) and [EM-162. "Removal and Installation RH"](#) (RH side).
2. Remove the spark plug with a suitable tool.



INSPECTION AFTER REMOVAL

- Do not use a wire brush for cleaning the spark plugs. Replace as necessary.



ENGINE MAINTENANCE (VQ35DE)

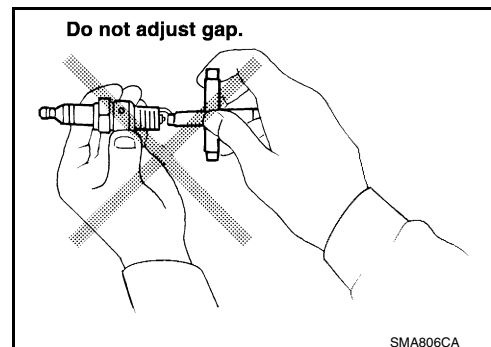
< PERIODIC MAINTENANCE >

- If plug is covered with carbon, a spark plug cleaner may be used.

Cleaner air pressure : less than 588 kPa (6 kg/cm², 85 psi)

Cleaning time : less than 20 seconds

- Checking and adjusting plug gap is not required between change intervals. If the gap is out of specification, replace the spark plug.



INSTALLATION

Installation is in the reverse order of removal.

Standard type*	DENSO
	FXE22HR11
Gap (nominal)	1.1 mm (0.043 in)

*: Always check with the Parts Department for the latest parts information.

EVAP VAPOR LINES

EVAP VAPOR LINES : Inspection

INFOID:000000009464563

- Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
- Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

CHASSIS AND BODY MAINTENANCE

IN-CABIN MICROFILTER

IN-CABIN MICROFILTER : Removal and Installation

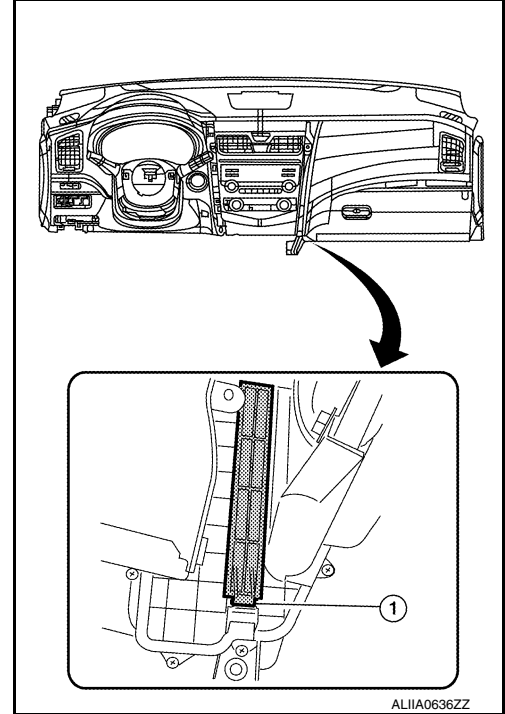
INFOID:000000009464564

REMOVAL

1. Disengage the filter cover tab (1) to remove the filter cover.

CAUTION:

Use care when lifting up on the tab to avoid damaging it.



2. Remove the in-cabin microfilter from the blower unit.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

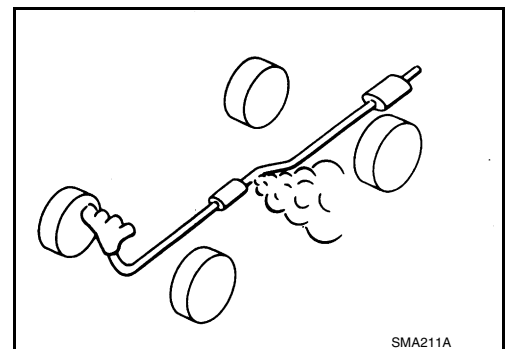
- When installing, handle the filter with extreme care to avoid deforming or damaging the filter.
- If the filter is deformed/damaged when removing, replace it with a new one. A deformed or damaged filter may affect the dust collecting performance.

EXHAUST SYSTEM

EXHAUST SYSTEM : Checking Exhaust System

INFOID:000000009464565

Check the exhaust pipes, muffler, and mounting components for incorrect attachment, leaks, cracks, damage, or deterioration.



CVT FLUID

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

CVT FLUID : RE0F10D

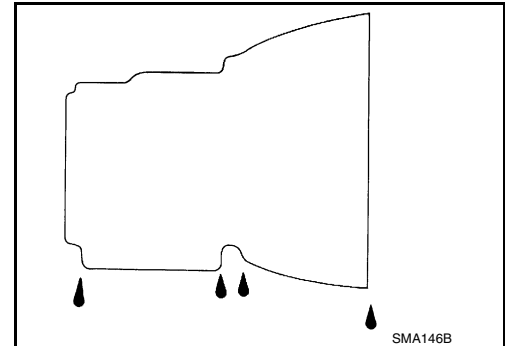
INFOID:000000009464566

CVT FLUID : Inspection

INFOID:000000009464567

FLUID LEAKAGE

- Check transaxle surrounding area (oil seal and plug etc.)for fluid leakage.
- If anything is found, repair or replace damaged parts and adjust CVT fluid level. Refer to [TM-84, "Adjustment"](#).



CVT FLUID : Replacement

INFOID:000000009464568

- | | |
|----------------|--|
| CVT fluid | : Refer to TM-212, "General Specification" . |
| Fluid capacity | : Refer to TM-212, "General Specification" . |

CAUTION:

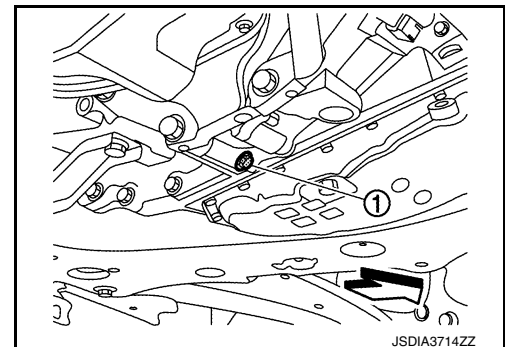
- Always use shop paper. Do not use shop cloth.
- Replace a drain plug gasket with new ones at the final stage of the operation when installing.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.
- After replacement, always perform CVT fluid leakage check.

1. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
2. Select "FLUID TEMP" and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the "P" position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Remove the drain plug and drain the CVT fluid from the oil pan. Refer to [TM-186, "Exploded View"](#).
6. Install the drain plug to oil pan.

CAUTION:

Drain plug gasket use the old one.

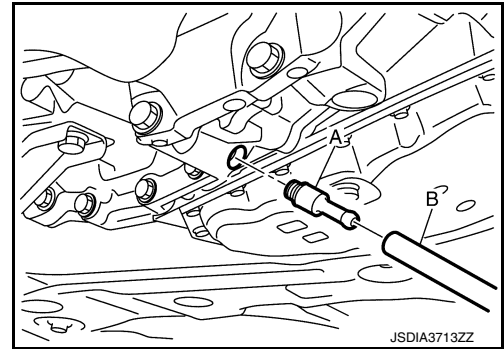
7. Remove the overflow plug ① from converter housing.



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.
CAUTION:
Tighten the charging pipe by hand.
9. Install the ATF changer hose (B) to the charging pipe.
CAUTION:
Press the ATF changer hose all the way onto the charging pipe until it stops.
10. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.
11. Remove the ATF changer hose and charging pipe, then install the overflow plug.
NOTE:
Perform this work quickly because CVT fluid leaks.
12. Lift down the vehicle.
13. Start the engine.
14. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.
NOTE:
Hold the lever at each position for 5 seconds.
15. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).
16. Stop the engine.
17. Lift up the vehicle.
18. Remove the drain plug, and then drain CVT fluid from oil pan.
19. Repeat steps 8 to 18 (one time).
20. Tighten the drain plug to the specified torque. Refer to [TM-186, "Exploded View"](#).
21. Remove the overflow plug.
22. Install the charging pipe set (KV311039S0) into the overflow plug hole.
CAUTION:
Tighten the charging pipe by hand.
23. Install the ATF changer hose to the charging pipe.
CAUTION:
Press the ATF changer hose all the way onto the charging pipe until it stops.
24. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.
25. Remove the ATF changer hose and charging pipe, then install the overflow plug.
NOTE:
Perform this work quickly because CVT fluid leaks.
26. Lift down the vehicle.
27. Start the engine.
28. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.
NOTE:
Hold the lever at each position for 5 seconds.
29. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).
30. Lift up the vehicle.
31. Remove the overflow plug and confirm that the CVT fluid is drained from the overflow plug hole.
CAUTION:
Perform this work with the vehicle idling.
NOTE:
If the CVT fluid is not drained, refer to "Adjustment" and refill with the CVT fluid.
32. When the flow of CVT fluid slows to a drip, tighten the overflow plug to the specified torque. Refer to [TM-186, "Exploded View"](#).
CAUTION:
Do not reuse O-ring.
33. Lift down the vehicle.



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CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

34. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
35. Select "CONFORM CVTF DETERIORATION".
36. Select "Erase".
37. Stop the engine.

CVT FLUID : Adjustment

INFOID:000000009464569

CVT fluid : Refer to [TM-212, "General Specification"](#).

Fluid capacity : Refer to [TM-212, "General Specification"](#).

CAUTION:

- During adjustment of the CVT fluid level, check CONSULT so that the oil temperature may be maintained from 35 to 45°C (95 to 113°F).
- During adjustment of the CVT fluid level, check that the engine speed is maintaining 500 rpm.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.

1. Check that the selector lever is in the "P" position, then completely engage the parking brake.
2. Start the engine.
3. Adjust the CVT fluid temperature to be approximately 40°C (104°F).

NOTE:

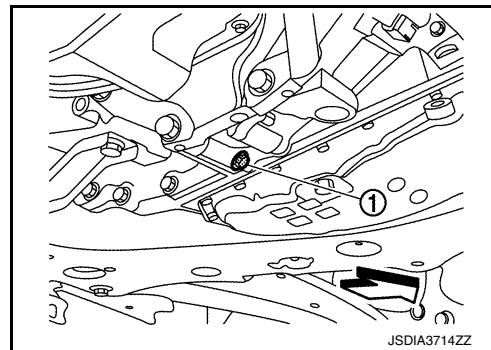
The CVT fluid is largely affected by temperature. Therefore be sure to use CONSULT and check the "FLUID TEMP" under "TRANSMISSION" in "Data Monitor" while adjusting.

4. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

5. Lift up the vehicle.
6. Check that there is no CVT fluid leakage.
7. Remove the overflow plug ① from converter housing.



8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.

CAUTION:

Tighten the charging pipe by hand.

9. Install the ATF changer hose (B) to the charging pipe.

CAUTION:

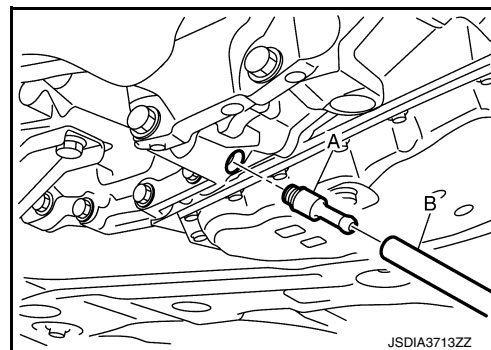
Press the ATF changer hose all the way onto the charging pipe until it stops.

10. Fill approximately 0.5 liter (1/2 US qt, 1/2 Imp qt) of the CVT fluid.
11. Remove the ATF changer hose from the charging pipe, and check that the CVT fluid drains out from the charging pipe. If it does not drain out, perform charging again.

CAUTION:

Perform this work with the vehicle idling.

12. When the flow of CVT fluid slows to a drip, remove the charging pipe from the converter housing.
13. Tighten the overflow plug to the specified torque. Refer to [TM-186, "Exploded View"](#).



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

CAUTION:

Do not reuse O-ring.

14. Lift down the vehicle.
15. Stop the engine.

CVT FLUID : RE0F10E

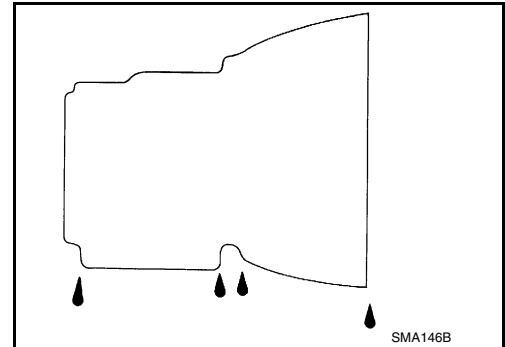
INFOID:000000009464570

CVT FLUID : Inspection

INFOID:000000009464571

FLUID LEAKAGE

- Check transaxle surrounding area (oil seal and plug etc.)for fluid leakage.
- If anything is found, repair or replace damaged parts and adjust CVT fluid level. Refer to [TM-286, "Adjustment"](#).



CVT FLUID : Replacement

INFOID:000000009464572

CVT fluid

: Refer to [TM-413, "General Specification"](#).

Fluid capacity

: Refer to [TM-413, "General Specification"](#).

CAUTION:

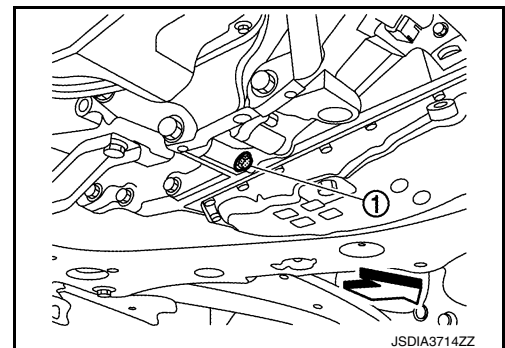
- Always use shop paper. Do not use shop cloth.
- Replace a drain plug gasket with new ones at the final stage of the operation when installing.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.
- After replacement, always perform CVT fluid leakage check.

1. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
2. Select "FLUID TEMP" and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the "P" position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Remove the drain plug and drain the CVT fluid from the oil pan. Refer to [TM-387, "Exploded View"](#).
6. Install the drain plug to oil pan.

CAUTION:

Drain plug gasket use the old one.

7. Remove the overflow plug ① from converter housing.



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.

CAUTION:

Tighten the charging pipe by hand.

9. Install the ATF changer hose (B) to the charging pipe.

CAUTION:

Press the ATF changer hose all the way onto the charging pipe until it stops.

10. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.

11. Remove the ATF changer hose and charging pipe, then install the overflow plug.

NOTE:

Perform this work quickly because CVT fluid leaks.

12. Lift down the vehicle.

13. Start the engine.

14. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

15. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).

16. Stop the engine.

17. Lift up the vehicle.

18. Remove the drain plug, and then drain CVT fluid from oil pan.

19. Repeat steps 8 to 18 (one time).

20. Tighten the drain plug to the specified torque. Refer to [TM-387, "Exploded View"](#).

21. Remove the overflow plug.

22. Install the charging pipe set (KV311039S0) into the overflow plug hole.

CAUTION:

Tighten the charging pipe by hand.

23. Install the ATF changer hose to the charging pipe.

CAUTION:

Press the ATF changer hose all the way onto the charging pipe until it stops.

24. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.

25. Remove the ATF changer hose and charging pipe, then install the overflow plug.

NOTE:

Perform this work quickly because CVT fluid leaks.

26. Lift down the vehicle.

27. Start the engine.

28. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

29. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).

30. Lift up the vehicle.

31. Remove the overflow plug and confirm that the CVT fluid is drained from the overflow plug hole.

CAUTION:

Perform this work with the vehicle idling.

NOTE:

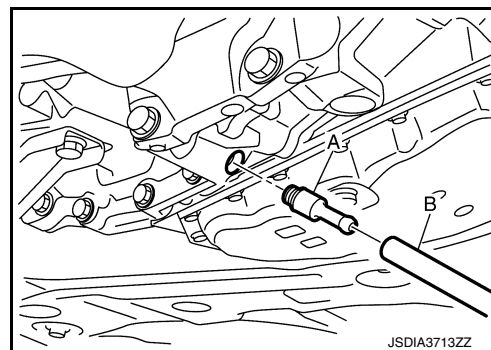
If the CVT fluid is not drained, refer to "Adjustment" and refill with the CVT fluid.

32. When the flow of CVT fluid slows to a drip, tighten the overflow plug to the specified torque. Refer to [TM-387, "Exploded View"](#).

CAUTION:

Do not reuse O-ring.

33. Lift down the vehicle.



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

34. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
35. Select "CONFORM CVTF DETERIORATION".
36. Select "Erase".
37. Stop the engine.

CVT FLUID : Adjustment

INFOID:000000009464573

CVT fluid : Refer to [TM-413, "General Specification"](#).

Fluid capacity : Refer to [TM-413, "General Specification"](#).

CAUTION:

- During adjustment of the CVT fluid level, check CONSULT so that the oil temperature may be maintained from 35 to 45°C (95 to 113°F).
- During adjustment of the CVT fluid level, check that the engine speed is maintaining 500 rpm.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.

1. Check that the selector lever is in the "P" position, then completely engage the parking brake.
2. Start the engine.
3. Adjust the CVT fluid temperature to be approximately 40°C (104°F).

NOTE:

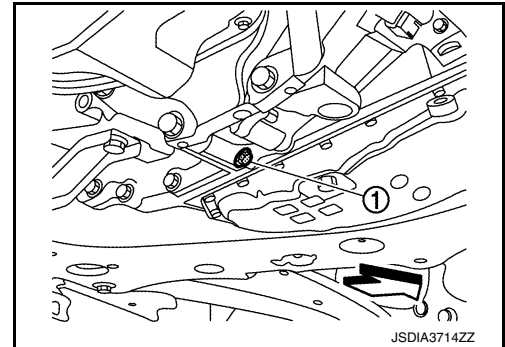
The CVT fluid is largely affected by temperature. Therefore be sure to use CONSULT and check the "FLUID TEMP" under "TRANSMISSION" in "Data Monitor" while adjusting.

4. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

5. Lift up the vehicle.
6. Check that there is no CVT fluid leakage.
7. Remove the overflow plug ① from converter housing.



8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.

CAUTION:

Tighten the charging pipe by hand.

9. Install the ATF changer hose (B) to the charging pipe.

CAUTION:

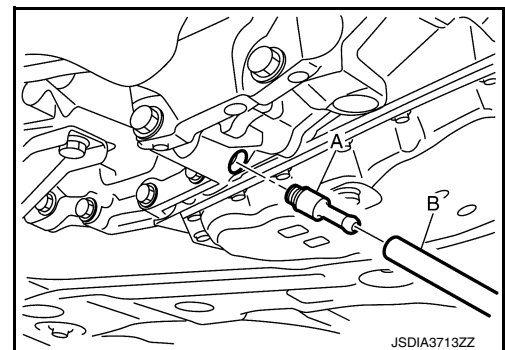
Press the ATF changer hose all the way onto the charging pipe until it stops.

10. Fill approximately 0.5 liter (1/2 US qt, 1/2 Imp qt) of the CVT fluid.
11. Remove the ATF changer hose from the charging pipe, and check that the CVT fluid drains out from the charging pipe. If it does not drain out, perform charging again.

CAUTION:

Perform this work with the vehicle idling.

12. When the flow of CVT fluid slows to a drip, remove the charging pipe from the converter housing.
13. Tighten the overflow plug to the specified torque. Refer to [TM-387, "Exploded View"](#).



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

CAUTION:

Do not reuse O-ring.

14. Lift down the vehicle.
15. Stop the engine.

WHEELS

WHEELS : Inspection

INFOID:000000009464574

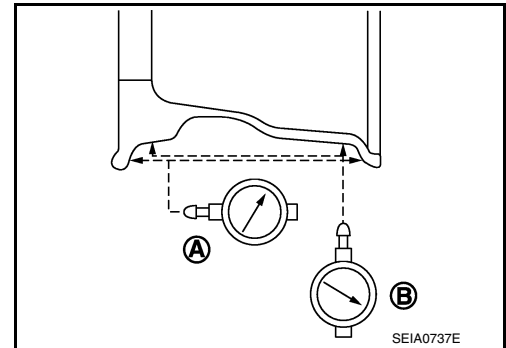
ALUMINUM WHEEL

1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
3. Remove tire from aluminum wheel and mount wheel on a tire balance machine.

CAUTION:

DO NOT use center hole cone-type clamping machines to hold the wheel assembly during tire removal/installation or balancing. Damage to the wheel finish, cladding or chrome may occur. Use only rim-type or universal lug-type clamping machines to hold the wheel assembly.

- a. Set dial indicator as shown.
- b. Check runout, if lateral runout (A) or radial runout (B) exceeds the limit, install a new wheel.



Lateral Deflection (A) Refer to [WT-60, "Road Wheel"](#).

Vertical Deflection (B) Refer to [WT-60, "Road Wheel"](#).

STEEL WHEEL

1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
- a. Remove tire from steel wheel and mount on a balancer machine.
- b. Set two dial indicators as shown.
- c. Set each dial indicator to "0".
- d. Rotate wheel and check dial indicators at several points around the circumference of the wheel.
- e. Calculate runout at each point as shown below.

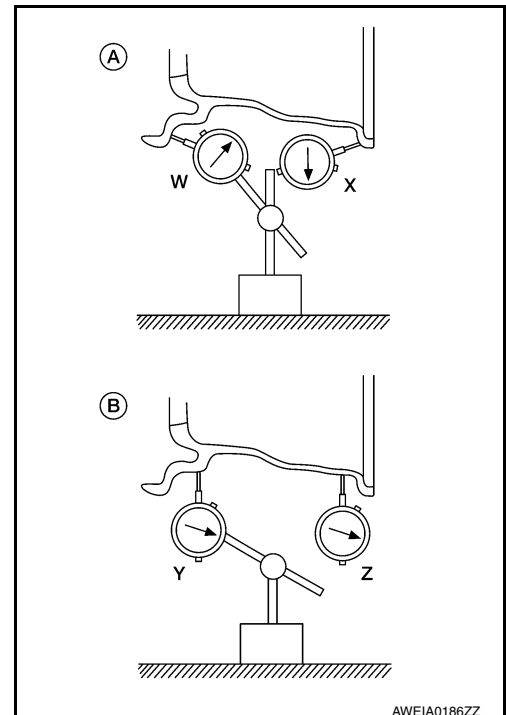
Lateral deflection (A) = $(W+X)/2$

Vertical deflection (B) = $(Y+Z)/2$

- f. Select maximum positive runout value and the maximum negative value.
Add the two values to determine total runout.
In case a positive or negative value is not available, use the maximum value (negative or positive) for total runout.
If the total runout value exceeds the limit, replace steel wheel.

Lateral Deflection (A) Refer to [WT-60, "Road Wheel"](#).

Vertical Deflection (B) Refer to [WT-60, "Road Wheel"](#).



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

WHEELS : Adjustment

INFOID:000000009464575

BALANCING WHEELS (ADHESIVE WEIGHT TYPE)

Preparation Before Adjustment

Remove inner and outer balance weights from the road wheel. Using releasing agent, remove double-faced adhesive tape from the road wheel.

CAUTION:

- **Be careful not scratch the road wheel during removal.**
- **After removing double-faced adhesive tape, wipe clean traces of releasing agent from the road wheel.**

Wheel Balance Adjustment

- If a balancer machine has an adhesive weight mode setting, select the adhesive weight mode setting and skip Step 2. below. If a balancer machine only has the clip-on (rim flange) weight mode setting, follow Step 2. to calculate the correct size adhesive weight.

1. Set road wheel on balancer machine using the center hole as a guide. Start the balancer machine.
2. For balancer machines that only have a clip-on (rim flange) weight mode setting, follow this step to calculate the correct size adhesive weight to use. When inner and outer imbalance values are shown on the balancer machine indicator, multiply outer imbalance value by 5/3 (1.67) to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value above and install in to the designated outer position of, or at the designated angle in relation to the road wheel.

- a. Indicated imbalance value $\times 5/3$ (1.67) = balance weight to be installed

Calculation example:

$23 \text{ g (0.81 oz)} \times 5/3 (1.67) = 38.33 \text{ g (1.35 oz)} \Rightarrow 40 \text{ g (1.41 oz)}$
balance weight (closer to calculated balance weight value)

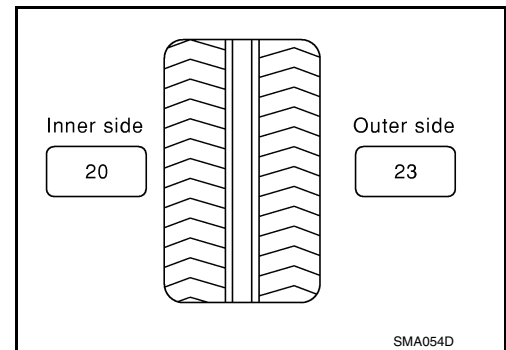
NOTE:

Note that balance weight value must be closer to the calculated balance weight value.

Example:

$37.4 \Rightarrow 35 \text{ g (1.23 oz)}$

$37.5 \Rightarrow 40 \text{ g (1.41 oz)}$



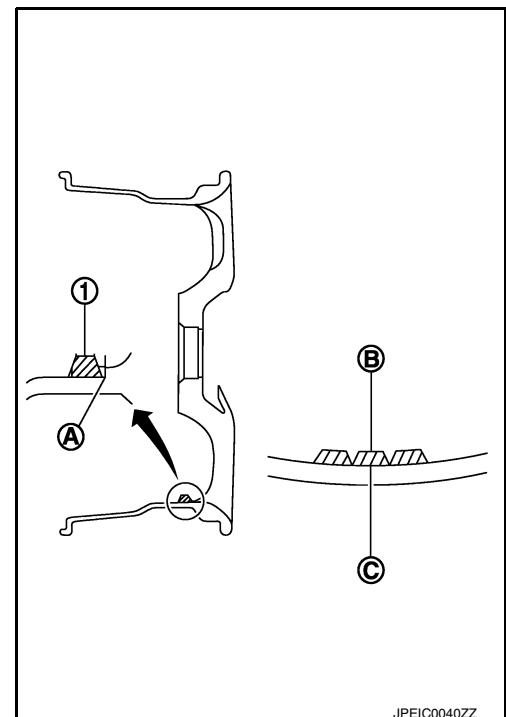
3. Install balance weight in the position shown.

CAUTION:

- **Do not install the inner balance weight before installing the outer balance weight.**
- **Before installing the balance weight, be sure to clean the mating surface of the road wheel.**
- When installing balance weight (1) to road wheel, set it into the grooved area (A) on the inner wall of the road wheel as shown so that the balance weight center (B) is aligned with the balancer machine indication position (angle) (C).

CAUTION:

- **Always use Genuine NISSAN adhesive balance weights.**
- **Balance weights are non-reusable; always replace with new ones.**
- **Do not install more than three sheets of balance weight.**



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

- If calculated balance weight value exceeds 50 g (1.76 oz), install two balance weight sheets in line with each other as shown.

CAUTION:

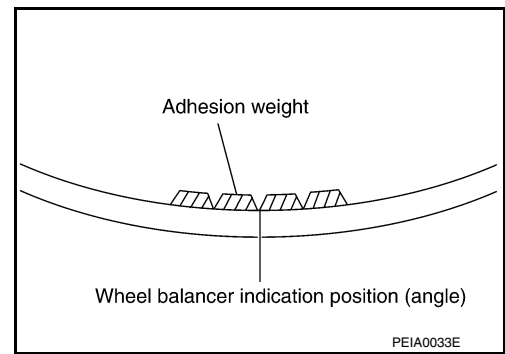
Do not install one balance weight sheet on top another.

- Start balancer machine again.
- Install balance weight on inner side of road wheel in the balancer machine indication position (angle).

CAUTION:

Do not install more than two balance weights.

- Start balancer machine. Make sure that inner and outer residual imbalance values are 5 g (0.17 oz) each or below.
- If either residual imbalance value exceeds 5 g (0.17 oz), repeat installation procedures.



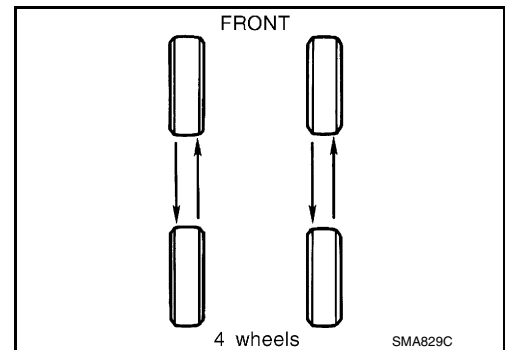
Wheel balance	Dynamic (At flange)	Static (At flange)
Maximum allowable imbalance	Refer to WT-55, "Adjustment" .	

TIRE ROTATION

- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-7, "FOR USA AND CANADA : Introduction of Periodic Maintenance"](#).
- When installing the wheel, tighten wheel nuts to the specified torque.

CAUTION:

- Do not include the T-type spare tire when rotating the tires.
- When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.
- Be careful not to tighten wheel nut at torque exceeding the criteria for preventing strain of disc rotor.
- Use NISSAN genuine wheel nuts for aluminum wheels.



Wheel nut tightening torque : 113 N·m (12 kg-m, 83 ft-lb)

- Perform the ID registration, after tire rotation. Refer to [WT-25, "Work Procedure"](#).

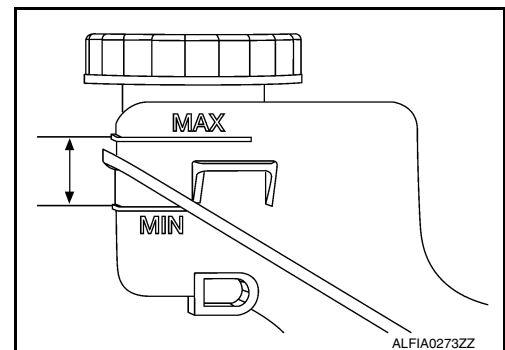
BRAKE FLUID LEVEL AND LEAKS

BRAKE FLUID LEVEL AND LEAKS : Inspection

INFOID:000000009464576

BRAKE FLUID LEVEL

- Make sure that the brake fluid level in the reservoir tank is between the MAX and MIN lines.
- Visually check around the reservoir tank for brake fluid leakage.
- If the brake fluid level is excessively low, check the brake system for leakage.
- If brake warning lamp remains illuminated after parking brake pedal is released, check the brake system for brake fluid leakage.



BRAKE LINE

- Check brake line (tubes and hoses) for cracks, deterioration or other damage. Replace any damaged parts.

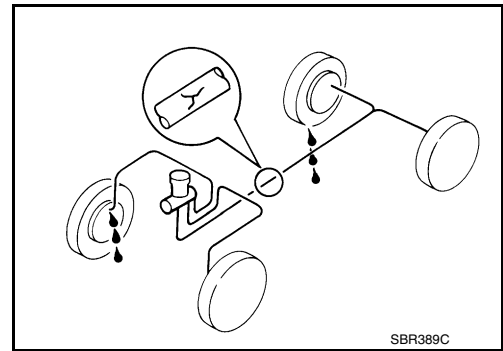
CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

2. Check for brake fluid leakage by depressing brake pedal under a force of 785 N (80 kg-f, 177 lb-ft) for approximately 5 seconds while engine is running.

CAUTION:

If brake fluid leakage occurs around joints, retighten or replace damaged parts as necessary.

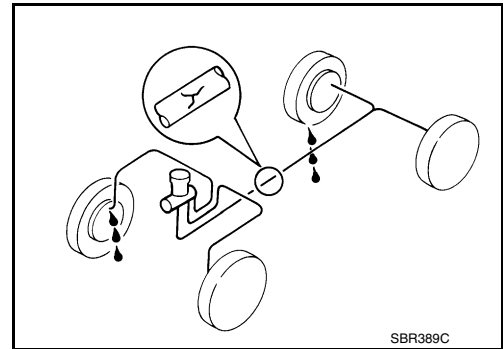


BRAKE LINES AND CABLES

BRAKE LINES AND CABLES : Inspection

INFOID:000000009464577

- Check brake fluid lines and parking brake cables for improper attachment, leaks, chafing, abrasions, deterioration, etc.



BRAKE FLUID

BRAKE FLUID : Drain and Refill

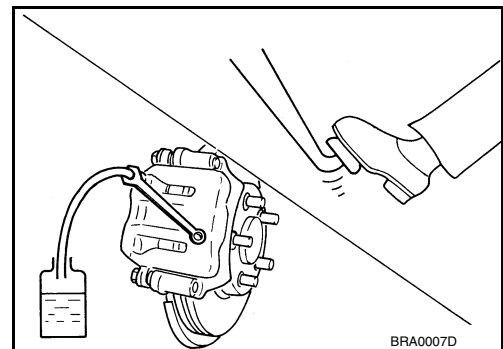
INFOID:000000009464578

CAUTION:

- Do not spill or splash brake fluid on painted surfaces. Brake fluid may damage paint. If brake fluid is splashed on painted areas, wash it away with water immediately.
- Prior to repair, turn the ignition switch OFF, disconnect the ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-73, "Removal and Installation \(Battery\)"](#).
- Refill brake system with new brake fluid. Refer to [MA-11, "FOR USA AND CANADA : Fluids and Lubricants"](#).
- Do not reuse drained brake fluid.

DRAINING

1. Turn ignition switch OFF and disconnect ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-73, "Removal and Installation \(Battery\)"](#).
2. Connect a vinyl tube to bleeder valve.
3. Depress brake pedal, loosen bleeder valve, and gradually remove brake fluid.



REFILLING

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

1. Make sure no foreign material is in the reservoir, and refill with new brake fluid.

CAUTION:

Do not reuse drained brake fluid.

2. Refill the brake system as follows:

- Depress the brake pedal.
- Loosen bleeder valve.
- Slowly depress brake pedal to 2/3 of the brake pedal full stroke.
- Tighten bleeder valve.
- Release brake pedal.

Repeat this operation at intervals of two or three seconds until all old brake fluid is discharged. Add new brake fluid to master cylinder reservoir sub tank frequently.

CAUTION:

Do not allow master cylinder reservoir to empty as this may cause damage to master cylinder internal components.

3. Bleed the air out of the brake hydraulic system. Refer to [BR-14, "Bleeding Brake System"](#).

DISC BRAKE

DISC BRAKE : Front Brake Pad

INFOID:000000009464579

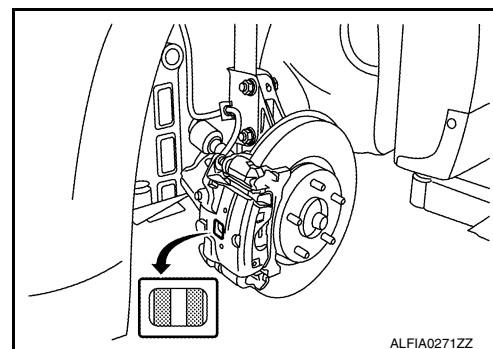
DISC BRAKE : Inspection

INFOID:000000009464580

PAD WEAR

Check brake pad thickness from an inspection hole on caliper body. Check using a scale if necessary.

Wear limit thickness : Refer to [BR-49, "Front Disc Brake"](#).



INFOID:000000009464581

DISC BRAKE : Front Brake Rotor

DISC BRAKE : Inspection

INFOID:000000009464582

APPEARANCE

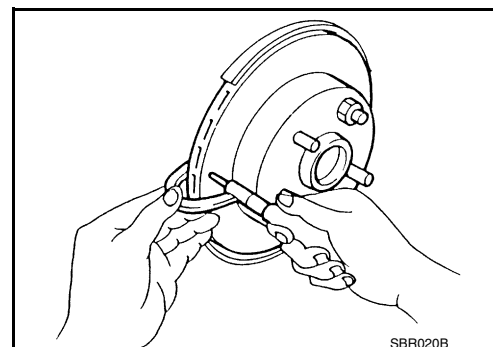
Check surface of disc rotor for uneven wear, cracks or damage. Replace if any abnormal conditions exist.

THICKNESS

Check the thickness of the disc rotor using a micrometer. Replace the disc rotor if the thickness is below the wear limit.

Wear thickness : Refer to [BR-49, "Front Disc Brake"](#).

Thickness variation : Refer to [BR-49, "Front Disc Brake"](#).



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

DISC BRAKE : Rear Brake Pad

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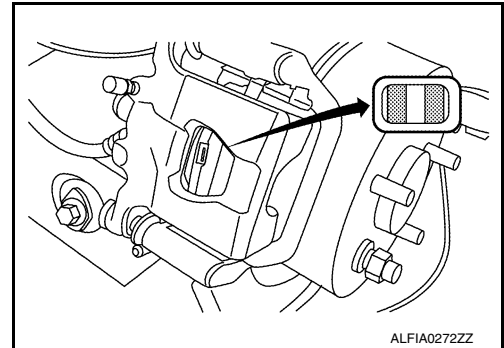
DISC BRAKE : Inspection

INFOID:000000009464584

PAD WEAR

Check pad thickness from an inspection hole on caliper body. Check using a scale if necessary.

Wear limit thickness : Refer to [BR-49, "Rear Disc Brake"](#).



DISC BRAKE : Rear Brake Rotor

INFOID:000000009464585

DISC BRAKE : Inspection

INFOID:000000009464586

APPEARANCE

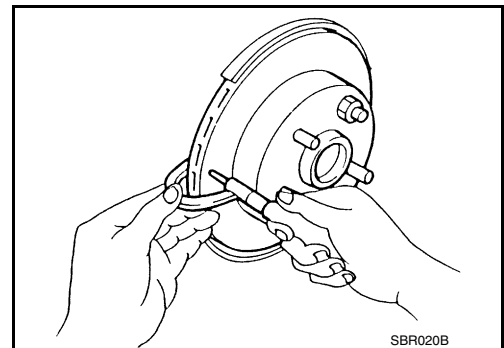
Check surface of disc rotor for uneven wear, cracks or damage. Replace if any abnormal conditions exist.

THICKNESS

Check the thickness of the disc rotor using a micrometer. Replace the disc rotor if the thickness is below the minimum thickness.

Minimum thickness : Refer to [BR-49, "Rear Disc Brake"](#).

Thickness variation : Refer to [BR-49, "Rear Disc Brake"](#).



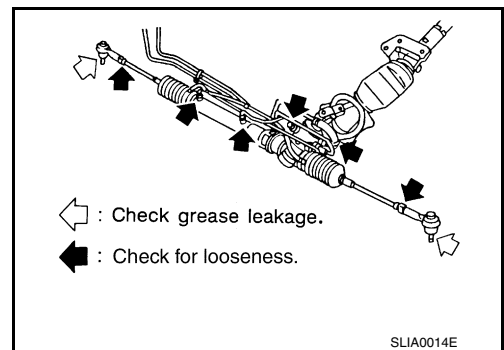
STEERING GEAR AND LINKAGE

STEERING GEAR AND LINKAGE : Inspection

INFOID:000000009464587

STEERING GEAR

- Check gear housing and boots for looseness, damage and grease leakage.
- Check connection with steering column for looseness.



STEERING LINKAGE

Check ball joint, dust cover and other component parts for looseness, wear, damage and grease leakage.

POWER STEERING FLUID AND LINES

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

POWER STEERING FLUID AND LINES : Inspection

INFOID:000000009464588

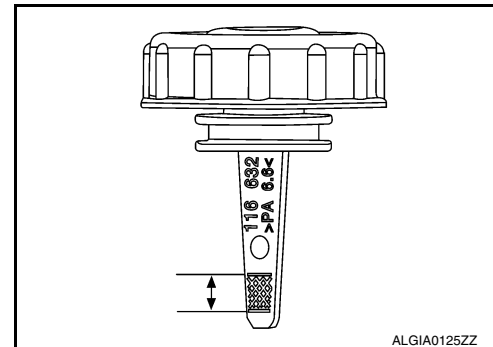
FLUID LEVEL

Check power steering fluid level at the scale on reservoir tank cap indicator.

- Check power steering fluid level with engine stopped and the fluid temp between 0 – 30° C (32 – 86° F).
- Power steering fluid level should be between the hatching area of the indicator on the power steering reservoir tank cap.

CAUTION:

- Do not overfill.
- Do not reuse used power steering fluid.
- Recommended power steering fluid is Genuine NISSAN E-PSF or equivalent. Refer to [MA-11, "FOR USA AND CANADA : Fluids and Lubricants"](#).



FLUID LEAKAGE

Check the power steering hydraulic system for leaks, cracks, damage, loose connections, chafing or deterioration. Repair or replace as necessary.

1. Start engine and allow engine to idle.
2. Turn steering wheel right-to-left several times.
3. Hold steering wheel at each "lock" position for five seconds to check fluid leakage.

CAUTION:

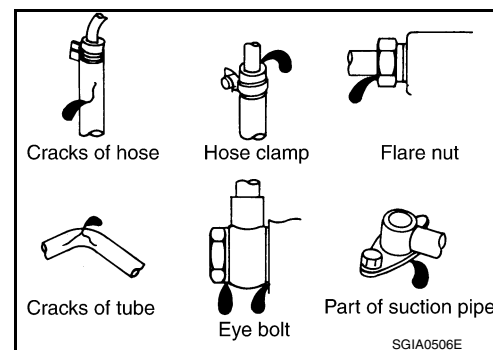
Do not hold steering wheel in a locked position for more than 10 seconds. Damage to power steering oil pump may occur.

4. If power steering fluid leakage at connections is noticed, loosen flare nut and retighten.

CAUTION:

Do not over tighten flare nut as damage to O-ring and connection can occur.

5. If power steering fluid leakage from the power steering oil pump is noticed, repair connection or replace power steering oil pump. Refer to [ST-15, "Inspection"](#).
6. Check steering gear boots for accumulation of power steering fluid. Power steering fluid indicates a leak from the power steering gear, replace as necessary. Refer to [ST-36, "Removal and Installation"](#).



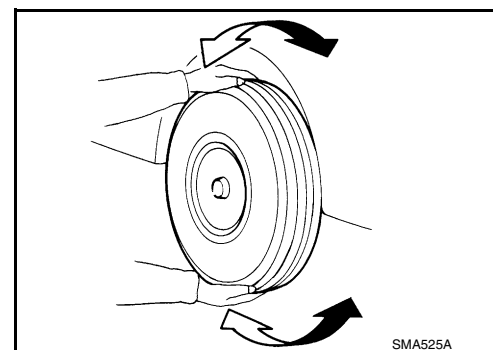
AXLE AND SUSPENSION PARTS

AXLE AND SUSPENSION PARTS : Inspection

INFOID:000000009464589

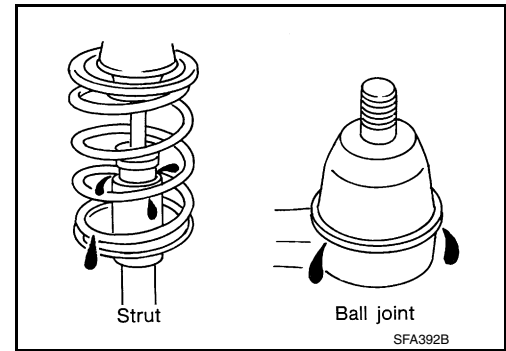
Check front and rear axle and suspension parts for excessive play, cracks, wear or other damage.

- Shake each wheel to check for excessive play.
- Check wheel bearings for smooth operation.
- Check axle and suspension nuts and bolts for looseness.
- Check strut (shock absorber) for oil leakage or other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage.



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >



DRIVE SHAFT

DRIVE SHAFT : Inspection

INFOID:000000009464590

- Check drive shaft mounting point and joint for looseness and other damage.
- Check boot for cracks and other damage.

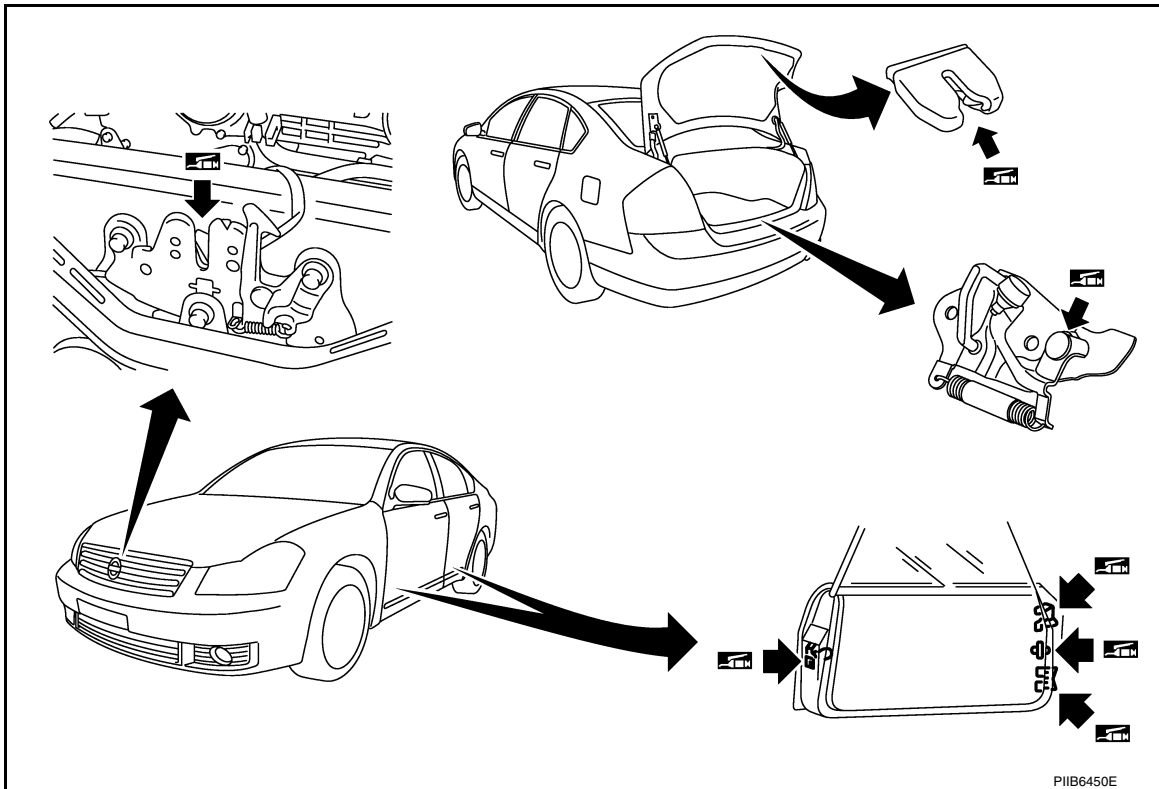
CAUTION:

Replace entire drive shaft assembly when noise or vibration occur from drive shaft.

LOCKS, HINGES AND HOOD LATCH

LOCKS, HINGES AND HOOD LATCH : Lubricating

INFOID:000000009464591



SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS : Inspection

INFOID:000000009464592

CAUTION:

- After any collision, inspect all seat belt assemblies, including retractors and other attached hardware (i.e. anchor bolt, guide rail set). NISSAN recommends to replace all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision. Also inspect seat belt assemblies not in use during a collision, and replace if damaged or improperly operating.

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

Seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision where the driver and passenger air bags are deployed.

- If any component of seat belt assembly is questionable, do not repair. Replace as seat belt assembly.
- If webbing is cut, frayed, or damaged, replace seat belt assembly.
- Do not oil tongue and buckle.
- Use only a Genuine NISSAN seat belt assembly.

For details, refer to [SB-5. "Inspection"](#) in the SB section.

- Check anchors for loose mounting.
- Check belts for damage.
- Check retractor for smooth operation.
- Check function of buckles and tongues when buckled and released.